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TO CORRESPONDENTS.

"Is CHOLERA CONTAGIOUS?" This communication has been received; but we must decline opening up a question which is now obsolete. In a late meeting of the Royal Medico-Chirurgical Society, where Dr. Budd brought forward the subject on a large statistical scale, not a voice was heard in favour of the contagion of cholera! Why then agitate the question more? Even if the doctrine were proved, its withering influence in case of another outbreak would be productive of dreadful evil—and if the doctrine be untenable, which we believe it is—how unjustifiable to scatter doubts on the subject. We do not like to incur the responsibility. The paper will be delivered to the author, or any other person whom he may depute to receive it.

Dr. Churchill's paper will be attended to in our next.

Mr. Fiddes' communication was received too late for the present number.

To Palazzo and several other querists we have to state that we know nothing of the Court transaction alluded to, beyond the rumors which have been publicly disseminated in the newspapers.

THE

Medico-Chirurgical Review,

No. LIX.

[NO. 19 OF A DECENNIAL SERIES.]

OCTOBER 1, 1838, TO JANUARY 1, 1839.

I. URINARY DISEASES AND THEIR TREATMENT. By *Robert Willis*, M.D., Licentiate of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c.

II. TRAITE DES MALADIES DES REINS, ETUDIEES EN ELLE-MEMES ET DANS LEURS RAPPORTS AVEC LES MALADIES DES URETRES DE LA VESSIE, DE LA PROSTATE, DE L'URETRE. Par *P. Rayer*, Medécin de l'Hôpital de la Charité, Paris, 1837-38.

OUR readers are aware that at different times we have brought the subject of diseases of the urinary organs before them. Those diseases are important, numerous, and common. They have grown into consequence with the growth of pathology, for this has shewn that complaints referred to other parts had their essential seat in these regions, and that the disorders of the latter were both an index and a result of general constitutional disturbance. This circumstance has contributed to separate these maladies from the confined class of local alterations, and has brought within the range of science what before was the prey of the ignorant and designing quack.

To be "a water-doctor" was formerly a subject of merriment. The astrologer the Katerfelto of the place was the man. In describing Sidrophel, Butler writes—

> "To whom all people, far and near,
> On deep importances repair;
> When geese and pullen are seduc'd,
> And sows of sucking-pigs are chows'd;
> When murrain reigns in hogs or sheep,
> And chickens languish of the pip;
> When butter does refuse to come,
> And love proves cross and humorsome;
> To him with questions, and with urine,
> They for discov'ry flock or curing."

But Sidrophel's occupation's gone. Syphilis, the "gravel," the stone, are no longer the no-man's land of physic, but have been investigated, and must henceforth be successfully cultivated, by men of high general attainments. Those attainments have to grapple with no trifling difficulties; for these complaints, perhaps more than any others in surgery, require keen analysis in their discrimination, and the exercise of judgment in their treatment.

Dr. Willis informs us, in his preface, that his object has been to give a comprehensive and connected view of the *Functional Derangements of the Organs which secret and excrete the Urine*, whether primary or secondary in their nature, *and of the medical and dietetic Treatment adapted to their different Forms.* As among the most frequent and formidable of the immediate consequences of certain disordered states of the renal secretion, he has also included a particular consideration of *Stone in the Kidney and Bladder, and of its Remedy by Medical Means.* He goes on to state:—

"A few years have added largely to our knowledge both of the physiology and pathology of the kidney; and every step in advance, has made the necessity of studying the qualities of the urine in almost every one of the diseases with which the body of man is afflicted, more and more apparent. Under the guidance of science, too, and particularly of recent discoveries in animal chemistry, the examination of the urine, an art but lately held in merited contempt, has assumed a character of the highest importance to the practical physician. If it have been deemed of moment to ascertain the qualities of the alvine evacuations—the mere residue, the undigested and unavailable portions of the food,—it must surely at once be seen that it is of paramount importance to determine the condition of that secretion, which contains the recrementitious matter of the blood, and in its constitution presents an index, as it were, of the state of all the functions whose sum composes the Life. Urinary diseases are besides in themselves, and considered abstractedly, subjects of peculiar interest and importance. They are of very common occurrence, extremely rebellious in their nature, and most fatal in their effects. They are, farther, very far from being generally understood; of all the well-worn pathways of medical literature, there is probably no one less trodden than that which leads to a knowledge of the forms, tendencies, and medical treatment of urinary diseases.

Much has undoubtedly been done in this department of late; but what exists lies widely scattered, is little accessible, and, without connexion, is even less available for practical purposes. I have gathered these fragments together, and striven to arrange them into a whole, under the lights afforded by physiology, reflection, and experience." viii.

These remarks will afford a key to the character and complexion of the work. Like its author it displays the stamp of learning, and will be found to constitute a careful compilation.

The work consists of an introduction and of two parts. The first part is occupied with the consideration of the Functional Derangements of the Kidneys, and their immediate consequences; the second part is devoted to the Functional Derangements of the Organs which excrete the Urine.

The First Part comprises eight chapters. The first is on the morbid states in which the secreting faculty of the kidney is exalted, and the menstruum and readily soluble principles of healthy urine occur in altered absolute, or relative quantity; the second on the morbid states in which the secreting faculty of the kidneys is lessened or abolished; the third, on the morbid states in which the urine contains in excess and as precipitates, certain ingredients that occur normally in smaller quantity and in solution; the fourth, on the morbid states in which the urine contains in solution or as precipitates, certain principles which do not occur in the healthy secretion, but appear to be derived immediately from one or other of these; the fifth, on the morbid states in which certain matters being constituents of the blood are contained in the urine; the sixth, on the morbid states in which the constituents of secretions and altered elements of the blood are discharged with the urine;

the seventh, on the morbid states in which principles foreign to the urine and the blood, and derived from none of the natural constituents of these fluids, are eliminated by the kidney; and the eighth, on the consequences of one or other of the mobid states described, particularly of those comprised in Chapters III. and IV.—Urolithiasis, the formation and growth of urinary calculi.

The Second Part presents five chapters. The first is on impediments to the discharge of the urine; the second on inability to retain the urine; the third, on irritability of the bladder—Cysterethismus; the fourth, on spasm of the bladder—Cystospasmus; the fifth, on catarrh of the bladder—Cystorrhœa.

The introduction, consisting of twenty-six pages, is occupied with the physiology of the kidney, and natural constitution of the urine. On these points it will not be necessary for us to dwell long.

Animals, it is well known, are composed of oxygen, hydrogen, carbon and nitrogen. Their food may or may not contain the latter, but carbon and nitrogen, which form elements of composition, must be partially got rid of. There is an apparatus, therefore, for throwing off both. A lung, observes Dr. Willis, or something analogous to it, is the apparatus in reference to the carbon; a kidney, that in reference to the nitrogen. The lung and the kidney, consequently, taken together, constitute the apparatus of rejection among animals. It has long been known that no animal could survive continued abstraction from the access of air; that the elimination of carbon, affected by the contact of the atmosphere, was necessary to its existence, and that an organ or means of some kind for affecting this object was as universal as organization itself. Recent researches have also shown that we descend very low in the scale of creation before we lose traces of a kidney or apparatus for freeing the system of nitrogen. The long, and from their magnitude alone, evidently important Malpighian canals in Insects, have been found to secrete, and even to contain calculi of, uric acid. The same substance has also been discovered in the matter elaborated by the *saccus calcareus*, the *organe de la viscosité* of Cuvier, of Mollusca; and, as in the case of the lung, when we have lost traces of a concentrated and special organ that might be called a kidney, we find evidences of a means diffused through the system for accomplishing the important end of azotic purgation.

The principles excreted by the lung and the kidney represent very nearly the sum of those introduced as aliment, which may be regarded as finally decomposed into carbonic acid and urea.

"The experiments of M. Chossat upon this matter are of the highest interest. He showed that the quantity of solid urinous excrement was in harmony directly with the quantity combined with the quality of the food taken. Each ounce of farinaceous aliment, bread, yielded regularly 9.9 grains, each ounce of albuminous food 13.6 grains, and each ounce of fibrinous food 17.3 grains of solid urinous excrement. They therefore stood to each other in the power to produce solid urine, in the ratio of 5.7.9. When like weights of these different kinds of food deprived of water were taken, the differences in the proportion of urinous excrement yielded by each were still more striking; each ounce of dry bread, for instance, then produced from sixteen to nineteen grains, each ounce of dry albumen seventy-three grains and each ounce of dry fibrine seventy-six grains of solid urine. Whence it follows that the quantity of azote contained in the food is a principal element determining the amount of sold excrementitious urinary

matter. M. Chossat found, in fact, that ten-elevenths of all the azote ingested with the food were discharged by the kidney." xviii.

As Dr. Willis observes, these experiments of M. Chossat's go to place the kidney in the same rank as the lung, and sufficiently explain the serious disturbance of the health that results from impairments of its function.

We need not, at present, examine the anatomical structure of the kidney, and it is scarcely necessary to observe that the performance of its functions depends in a great measure on its nerves. This might have been anticipated à priori, and has received experimental confirmation from Müller and Peipers. When the renal nerves were destroyed or divided, the secretion of urine was entirely suspended.

The azotic compounds in the urine present themselves under the two principal forms of *urea* and *uric acid*. The former has been discovered in the blood; the latter, hitherto, has not. One, or both, with water, are probably the essential constituents of the urine.

The *specific gravity* of the urine varies with the quantity and quality of the food. It varies from 1.005, after a sparing meal with considerable quantities of diluents, to 1.033 or even 1.038, after a hearty meal, with chylification going on.

"Writers differ very much in their estimates of the *average density* of the urine. Prout believed that from 1.010 to 1.115 might be about the average density; any such estimate from 1.015 to 1.025 is certainly much too high for the latitude of London. My observations would lead me to say that the average specific gravity of the urine among grown individuals generally, could not be estimated more closely than 1.015. If children be included, an estimate somewhere about 1.012 will, I believe, be found very near the truth. Densities below 1.012, I should incline to speak of as *low*: densities above 1.020 I should certainly regard as *high*. But it is next to impossible to come to any conclusion on this point. The density of the urine in fact is influenced by so many varying circumstances—temperature, kind of food, quantity of drink, state of the alvine evacuations, &c. that we are only in a condition to judge of the point in each different individual instance. M. Chossat found the mean density under a vegeto-albuminous regimen in his own person to be 1.012; under an albuminous regimen it was 1.015; under a vegeto-fibrinous and a wholly fibrinous regimen 1.023 and 1.024." xxvii.

Solid Matters of the Urine.—The qualitative analysis of the urine is not difficult—the quantitative is. The analysis of the urine generally quoted is that of Berzelius, as old as the year 1809. It is as follows:—

Urea	30.10
Uric or lithic acid	1.00
Free lactic acid Lactate of ammonia Extractive matter soluble in alcohol Extractive matter soluble in water	17.14
Mucus of the bladder	0.32
Sulphate of potash	3.70
Sulphate of soda	3.16
Phosphate of soda	2.94
Phosphate of ammonia	1.65
Phosphate of lime and magnesia	1.00
Chloride of sodium	4.45

Hydrochlorite of ammonia.	1.50
Silicia, or silicic acid	933.00*

Dr. Christison has given a qualitative analysis of the urine of a healthy individual, of specific gravity 1.029, which was voided to the extent of about thirty-five ounces daily. Of this urine the solid contents amounted to 67.7 per 1000. Of these 55.2 were urea, extractive matters, and animalized acetates, soluble in alcohol; 11.1 alkaline muriates, sulphates and phosphates; 1.0 earthy phosphates, and 0.4 mucus. But Dr. Willis judiciously remarks, that this must be regarded as a specimen of urine of unusually high specific gravity. He observes:—

"I have found such differences in the relative quantities of the matters soluble in alcohol and in water, that I believe it to be no more possible to fix on any absolute standard in regard to the ratio of the animal matters to the salts, in the urine, than to fix on any term as a measure of its specific gravity. This must be apparent when it is seen that in Dr. Christison's analysis, the animal matters are to the salts nearly in the proportion of five to one; in Berzelius's they stand to each other nearly in that of three to one; whilst Dr. Bostock has, if I remember rightly, estimated them as existing in the ratio of about five to four. The result depends greatly on the strength of the alcahol employed." xxviii.

Perhaps some of our readers are not aware that urea, with one or two other proximate animal principles, may be formed artificially.† The mode of obtaining urea is as follows:—When a quantity of cynate of silver is treated with a solution of hydrochlorate of ammonia in water, a double decomposition takes place; chloride of silver, which is perfectly insoluble, falls to the bottom, a quantity of cyanate of ammonia remains in solution; this is readily obtained in the solid crystalline form by careful evaporation, and in elementary composition agrees exactly with the urea obtained from urine.

At the termination of his account of lithic acid, our author observes:—

"There is one circumstance, which may probably influence the solution of this substance, which has received less attention than it deserves; and which I now find I have myself overlooked in the proper place; it is this: that the combination between the lithic acid and the water must take place at the *moment of nascence*. It is familiarly known that several chemical combinations can only be effected by presenting the combining elements to one another in the nascent state. When the urine contains any lithic acid dissolved, the deposit of the substance from the menstruum is a mere question of time: sooner or later it always happens. The recent researches of Leibig and Woehler have rendered it probable that lithic acid is a compound of urea and a substance itself composed of cyanogen and carbonic oxide, a substance, which, by the action of certain reagents, (super oxide of lead,) and probably also by the deranged operation of the kidney, is converted into oxalic acid, and the peculiar matter found in the allantois of the calf, allantoin." xxxiii.

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* Dr. Willis's work, for that of a librarian, is carelessly written and got up. This analysis of the urine from Berzelius is a striking instance of the latter;—933 parts of silicic acid! The analysis usually quoted as that of Berzelius, is—

Siliceous earth	0.03
Water	933.

† It is on this point that the inverted pyramid of Pahtheism, has been poised by some of that metaphysical school.

After a brief survey of the names and labours of those who have contributed to render our information on the morbid states of the urine what it actually is, our author concludes by quoting and recommending for general adoption, Dr. Bostock's plan for noting the characters and qualities of that fluid in disease. We adverted to it in our last number, but it would be well to re-introduce the suggestions of Dr. Bostock here. With some slight modifications and additions, his formula, or proposal includes,—1. The designation of the circumstances under, and the time at which, the specimen of urine considered was voided; 2. Its quantity, and the quantity voided during the preceding twenty-four hours; 3. Its external characters,—colour, odour, transparency, or turbidity; 4. Its specific gravity, and the average specific gravity of the whole of the urine discharged during the previous twenty-four hours; 5. Its state in regard to acidity, neutrality or, alkalescence; 6. The amount of solid contents per cent.: the respective quantities of the extract soluble in strong alcohol, and in water being distinguished; 7. The effects of heat of nitric acid, before and after the application of heat, of corrosive sublimate, and ferrocyanite of potash; 8. The amount of precipitate thrown down by ammonia, and by oxalate of ammonia; 9. The nature of the deposites, when any; 10. The nature of the spontaneous changes undergone within twelve hours, and of those that take place in the course of two or three days.

With this we terminate our notice of the Introduction, and proceed to the first part of the work, on—

1.—FUNCTIONAL DERANGEMENTS OF THE KIDNEYS, AND THEIR IMMEDIATE CONSEQUENCES.

1.—MORBID STATES IN WHICH THE SECRETING FACULTY OF THE KIDNEYS IS EXALTED, AND THE MENSTRUUM AND READILY SOLUBLE PRINCIPLES OF HEALTHY URINE OCCUR IN ALTERED ABSOLUTE OR RELATIVE QUANTITY.

This chapter is sub-divided into three sections:—the first, on the discharge of urine which is characterized by deficiency of solid matters generally—Hydruria. The second, on the discharge of urine which is characterized by a deficiency of urea—Anazoturia. The third, on the discharge of urine which is characterized by a superabundance of urea—Azoturia.

The reader is already introduced to three of many new names; new, at all events, most probably to him. Whether the advantage of uniformity in nomenclature counterbalances the inconveniences of change of name is a point which we shall not now pause to discuss. But we are sure that authors ought to be chary how they dabble in the Lexicon for novel terms. What trouble his nomenclature must have cost Mason Good! Yet who knows or cares to know his learned designation for familiar maladies?

SECTION 1.—*Of the discharge of Urine which is characterized by deficiency of solid matters generally.*—HYDRURIA.

If an individual drinks a great deal, he voids a proportionate quantity of urine. But this is not disease. Yet occasionally there seems an insatiable

demand for fluid, in order to supply the kidney which voids it in excess. Dr. Willis has met with the following case, in the course of his reading on the subject.

Case. It was that of a small artizan, aged fifty-five, who came into the Hôtel Dieu of Paris, to be treated for a bruise of his knee, from which he speedily recovered. The uncommon thirst of this man, and the incessant calls he had to make water, attracted attention, and it was found that from the age of five years, he had had a constant thirst upon him, and been affected with a diuresis commensurate with his thirst. From the age of sixteen he had not drunk less, on an average, than two bucketfuls of water daily. During the ten days he remained in the Hôtel Dieu, he consumed on an average thirty-three pounds of water every day, often swallowing two litres (above two quarts) at a draught; his solid food was about one pound and three-quarters, and he seems also to have had a little wine. His evacuations daily were about thirty-four pounds of urine, and, at the most, one pound of fæces. Yet this man looked and seemed well; he possessed the ordinary strength of a little man of fifty-five; he was the father of several children, and suffered no inconvenience save from the necessity of drinking, and voiding his urine so frequently. The urine scarcely exceeded pure water in specific gravity. Reduced by evaporation and having yeast added, it gave no sign of fermentation. The urine was certainly quite healthy, only very much diluted.*

Dr. Willis quotes several other cases of a similar description. They are chiefly obtained from foreign sources, and do not seem to us to be perfectly free from the taint of exaggeration. Shall we receive without misgiving the following case?

Case. A woman, aged 40, the mother of many children, had suffered from continual thirst, and the discharge of a profusion of fetid urine since the time she was a child. Compelled to quit her father's house on account of the quarrelling to which her large consumption of water gave rise, she came to Paris, and entered into service. Here the increased quantity of water that was used in the family attracted attention, and it was found that the servant-girl was in the habit of drinking two or three pailfuls of the pure element every day. A shoemaker having paid his addresses to her, she contrived to conceal her infirmity from him till after the marriage, when of course he discovered the real worth of his bargain, and found that all his earnings were not sufficient, in the depth of Winter, to buy his wife water, so that he had to collect and melt snow and ice from the house-tops for her use. This woman enjoyed very good general health.

To this head of Hyperuresis, are to be referred the copious discharge of limpid watery urine on the conclusion of the hysterical paroxysm, and even the occasional diuresis under which subjects of nervous and excitable temperaments labour. The qualities of the urine, in hysteria, seem to vary considerably. Mr. Cruikshank found it to abound in saline matter, but to

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* Case reported by M. Bouissat, in the Recueil period. de Sedillot, tom. lxxx. p. 164.

contain hardly any urea and colouring matter. Nysten detected a considerable quantity of urea, but little of the peculiar oily extractive matter; the lithic acid and salts he reports as in health.

"My own experiments," says Dr. Willis, "would lead me to infer, that in hysterical urine, generally speaking, the characteristic ingredients were not essentially altered in their quality or relative proportions, although they are in very small amount, when their ratio to the menstruum is considered. I have always been able to detect urea; and if any salt has appeared to me more abundant than another, it has been the chloride of sodium. When the urine can scarcely be discovered to differ from spring water, by the areometer, the presence of common salt is still often to be detected by the taste, and I have never seen a solution of the nitrate of silver fail to produce considerable turbidity in hysterical urine even of the lowest specific gravity; but its distinguishing ingredients are always in such small proportion, that its specific gravity is not more than from one to two or three in the thousand higher than pure water." 5.

The urine voided by many nervous subjects in the earlier part of the day is of the same general character as in hysteria. Its specific gravity is sometimes as low as 1.002, yet the urea and alkaline salts may bear to each other nearly the proportions of health. The kidney seems merely to participate in the general irritability of the system. After dinner this subsides, under the influence of the stimulus of the meal; and the patient may now sit for several hours without the slightest inconvenience, and then void ten or twelve ounces of urine at once.

If this be examined, it will often be discovered, although mostly pale-coloured, to be of unusually high specific gravity. Dr. Willis has found it as high as 1.033 at 60° Farenheit, and containing such an abundance of urea, that it yielded a plentiful crop of crystals of nitrate of urea without any preliminary concentration. On standing, this urine almost always deposits the phosphatic salts; in from twelve to twenty-four hours it becomes covered on the surface with an iridescent pellicle; and by and by its reaction is alkaline, although when voided it was acid.

The diuresis under which men advanced in years occasionally labour, is of a similar description. The frequent calls to empty the bladder are accompanied with an augmented flow of urine. Dr. Willis relates a case, but it is defective in an essential point, an examination of the body after death. We cannot say that we have ever seen the diuresis of the old proceed to a fatal termination, without some organic lesion. Yet the case exhibits the leading symptoms, and is interesting as a specimen of their character.

Case. The diuresis under which the patient, a gentleman of seventy-two, laboured at the time of his death, had existed for many years, during the three or four last of which he was accustomed to pass regularly between six and eight pints, and often as many as ten or twelve pints of urine in the course of the twenty-four hours. He had always three or four, and sometimes more, calls to make water in the course of the night. The urine was at all times very pale in colour, and quite transparent when passed; nor did it almost ever become turbid in cooling. It had little odour, but what it possessed was of the proper urinous character. It reddened litmus paper, even some time after it had been passed. Its specific gravity varied from 1.006 to 1.012. The solid were, therefore, in very small proportion to the liquid parts; but they were of the usual kind, being made up in nearly

equal proportions of urea and extractive matter soluble in alcohol, and of the ordinary earthy and alkaline salts, among which the phosphates greatly predominated. This urine concentrated, and set aside with yeast, showed no symptom of fermentation, and therefore contained no sugar.

The most remarkable constitutional symptoms were languor and disinclination to exercise. The appetite was rather impaired; the thirst was increased; the temper peevish; emaciation inconsiderable.

"There can be no doubt but that such a state of things must hasten the natural decay of the body. The rest broken every hour to satisfy a call to void the bladder were alone sufficient to influence the health most prejudicially. The diuresis of men somewhat advanced beyond the middle period of life is therefore, a symptom which ought not to be neglected. The disease may indeed go on for years, in some cases, without apparently affecting the general health; but it always tells on the system in the long run; and the prognosis, though it may not be immediately, is never otherwise than remotely, unfavourable." 9.

The only morbid condition of the system with which Dr. Willis can connect this form of diuresis, is the nervous temperament.

Treatment.—As no determinate alteration of the urinary organs occasions this form of disorder, the treatment must necessarily be general. The functions of the stomach and alimentary canal are to be carefully attended to. The diet must be nicely regulated, in order that all the food taken may be properly digested and assimilated: and no more fluid should be allowed than is imperatively required to allay feverish sensations of thirst. The greater the quantity of fluid consumed, the more are the kidneys required to free the circulating mass from superfluous water; and organs kept in a state of constant excitement, often end by acquiring a habit of acting in excess. The functions of the skin should be looked to. It is almost always dry and unperspiring. This state must be remedied by the use of the warm bath and flesh-brush, the bath being taken every day or every other day, the brush diligently employed night and morning; and by warm clothing.

"With regard to medicines, these must be for the most part selected from the class of anodynes and tonics; as much of some mild aperient, too, as will secure the due action of the bowels, is indispensable. Probably there is no better compound, under circumstances of the kind we have in view, than a mixture of rhubarb and aloes, in combination with extract of hyoscyamus, which will be found to accomplish more than one of our indications. Mercurials seldom do good in an irritable state of the system like that which accompanies great discharges of watery urine. Their use, even in the way of alteratives, can be very well dispensed with. Narcotics, and of these the chief, opium, are often of signal service in allaying the irritable condition that is proclaimed by hydruresis. To the youthful we prescribe these remedies with reserve; but among the aged we can use them freely. In the case of the old gentleman I have detailed, tincture of opium, even in small doses, had always the effect of lessening the flow of urine, in abating the thirst, in procuring quiet nights, and in increasing the strength; but being a dabbler in physic himself, he never could be prevailed upon to push the medicine far enough to give a decided check to the disease, which I believe might almost at any time have been done, and his life thereby prolonged.

Of tonics, the infusions of bark, gentian, and quassia, in conjunction with the carbonate of iron, will be found the best suited to these cases, and may always be prescribed with an assurance of proving beneficial." 11.

SECTION 2.—*Of the discharge of Urine which is characterized by a deficiency of Urea.*—ANAZOTURIA,

A copious discharge of urine, says Dr. Willis, characterised not merely by a relative but by an absolute deficiency of urea, the peculiarly azotic principle of this fluid, although by no means an uncommon occurrence, has either been overlooked or altogether denied by pathological writers. It is, however, one of the many forms of disordered renal function which has been spoken of under the title of *Diabetes*, or *Diabetes insipidus*. And Dr. W. believes that almost all the cases of diabetes reported as cured have been of this description.

The urine, he proceeds, is passed in great abundance; it is limpid, of a very pale straw-colour, or altogether colourless, and has a very slight, faint odour. When first voided, it shews weak acid reaction or is neutral; it rarely precipitates within twenty-four hours, but cannot be kept for any length of time without undergoing change; it becomes faintly ammoniacal, and covered with a fine creamy pellicle on its surface, which shows the minute pearly-white crystals of the ammonia-magnesian phosphate.

This complaint would appear not unfrequent among the children of the poor.

"I have at this moment three children under my care at the Royal Infirmary for Children, affected with urinary diseases, two of whom present the form of malady to which I have ventured to apply the title of *Anazoturia*. The one of these children is a boy three years and a half old, and has been weakly from his birth. His extremities are emaciated, but he has a large, soft, protuberant belly. He is spiritless, and disinclined to move and play about. His appetite is voracious, and his thirst incessant. The poor little fellow will drink nearly a pint of water at a time if allowed, and is not satisfied with less than about four pints in the course of the day and night. He makes water in considerably greater quantity; which was to have been expected; for he has a constant craving for food, and cries until he is indulged with every thing he sees—meat, bread, potatoes, cabbage, and raw lettuce. The bowels are constipated, and the feces present pieces of undigested aliment, particularly potatoe, carrot, &c. The urine first brought to me by the mother was so free from every one of the sensible properties of urine, that I insisted it must be the rinsings of the bottle, returned into it by mistake; but I soon satified myself that I had the veritable urine of the child, by getting him to make water before me. This urine did not differ in appearance from common water; it was quite limpid, absolutely colourless, all but free from odour, and neutral when passed. It became in the slightest possible degree opalescent or milky after standing ten or twelve hours. In specific gravity it corresponded as nearly as possible with distilled water; at first I even thought it lighter, but this was from trying it with a new hydrometer, the scale of which I immediately discovered to be set about a degree too low. Brought to the boiling point it let fall no precipitate, a few bubbles of air (probably carbonic acid gas) being disengaged. No effect followed the addition of a solution of oxalic acid. Caustic potash caused the subsidence of a few flocculi, 1000 grains evaporated slowly left but a fraction of a grain of residue, which appeared to consist entirely of mucus, lithate of ammonia, and the phosphatic salts; but it must also have contained a small quantity of urea and colouring matter; for the urine kept during two days in a temperature of about 65° Farenheit, became very faintly ammoniacal. The quantity of residue I had to deal with was too small to enable me to speak with greater detail." 13.

Dr. Willis refers to several recorded cases or groups of cases, as instances of this affection. But, on analysis, these cases, as he observes, have many

features in common. They were all characterized by thirst, gnawing sensations at the pit of the stomach, white furred tongue, constipated bowels, and a parched state of the skin. There was also more or less of emaciation, considerable loss of strength, and generally great depression of spirits in all. The hyperuresis in this class of cases is, therefore, a much more important symptom than in those where it occurs without obvious implication of the functions of nutrition; there is unquestionably disordered assimilation at work here, and the altered nature of the renal secretion is but one indication of a deeply-seated constitutional malady. In children the complaint has appeared to be intimately connected either with the irritation of teething, or a disordered state of the stomach and bowels consequent upon weaning and the use of improper food.

The disease wears an unfavourable aspect. Some of the apparent cures have proved only temporary. The treatment recommended by our author is such as reasoning would suggest.

"It must be directed to the restoration of the functions of the stomach, bowels and skin; to the suppression of the habitual excitement under which the kidney labours, and to the confirmation of the strength generally. These indications plainly point to gentle aperients, and to the use of tonic, diaphoretic, and anodyne medicines. Aloes and rhubarb, the infusions of calumbo, gentian, and quassia, and the compound ipecacuanha powder, are the particular medicines that generally agree best in these cases. The diet should be light and nourishing, and made to consist principally of farinaceous articles and animal food. Slops should be avoided. Toast-water slightly acidulated with the muriatic or nitric acid, but taken in no larger quantity than is found indispensably necessary to allay thirst, will make the best drink." 18.

Section 3.—*Of the discharge of Urine which is characterized by a superabundance of Urea*—Azoturia,

The urine may at any time, and in any individual, contain more than its usual proportion of saline and peculiar animal ingredients.

But under the heads of *diabetes* or *diabetes insipidus*, there has been described a permanent morbid state of the urine, characterised by a considerable increase of fluid as well as of dissolved urea.

"In this form of malady the quantity of urine secreted is usually large, the fluid is transparent and commonly light-coloured, although it has been seen so dark as to resemble a mixture of porter and water, it exhales a faint but proper urinous ordour, and shews acid reaction with litmus paper; its specific gravity is commonly high, varying at different times of the day between 1.018 and 1.035; the specimens of the highest density yield crystals of nitrate of urea on the addition of nitric acid after a few hours rest, without the assistance of concentration; the others require a certain though still a small relative amount of concentration before they can be made to furnish crystals of this substance. To density of urine, that might be styled ureous, however, would not appear to be necessarily great. There is, for instance an 'analysis of a specimen of anomalous urine' in the 19th volume of the Medical Gazette, by Mr. Rees, of which the specific gravity was only 1.008; nevertheless, the amount of urea in relation to the other solid ingredients appears to have been large, for of the fifteen grains of solid extract yielded by 1000 grains of this urine, 10.2 grains were urea. The disease here was obviously a variety of the hydruria." 19.

There are frequent calls to make water, urgent when they happen. The general symptoms are loss of strength, feelings of languor, a greater or less

degree of emaciation, &c. The emaciation and debility, however, do not usually shew themselves in a very marked degree, at least in the earlier stages of this disease. Some degree of thirst is very constantly present, and there is often a sense of sinking, and complaints of an uneasy gnawing pain at the pit of the stomach. There is often an anxious, hollow-eyed expression of countenance. The patients are generally of a spare habit, and a nervous temperament, and have always been more or less troubled with a frequent desire to make water. Men who had lived freely in former years, who had been in the habit at one time of indulging in spirits, wine, and other fermented liquors, and especially men who had abused their sexual propensity, have been observed to be the usual subjects of this form of complaint. Yet temperance does not, nor it is likely that it would, secure an entire immunity from its approach. Intemperance is but one cause of morbid action. Unfortunately there are many others. Children are often affected, though in them the disorder is too apt to be overlooked.

"Ureous urine has been observed to alternate with other morbid states of the same fluid, with the albuminous and saccharine particularly, and also with that in which the phosphatic salts are copiously elaborated. I believe it to be the common precursor, as recent inquiries have shown it to be the general attendant of the mellitic diabetes, as well as the state into which that formidable disease passes under the influence of treatment of a certain kind. A ureous state of the urine has also been found to accompany several forms of acute disease. Thus the urine of a young man labouring under peritonitis was found on analysis to contain one-third more urea than healthy urine. In certain continued fevers, too, of bad type, the urea often becomes disproportionately abundant in the small quantity of urine then discharged, and it is under such circumstances that the kidney seems occasionally to separate the elements of urea under other and very remarkable forms, namely, carbonate of ammonia and hydrocyanic acid, which I shall mention by and by in two of the sections of my fourth chapter.

Instead of being absent in the urine of patients affected with the honey diabetes, as was long supposed to be the case, urea has, with the progress of chemistry, been demonstrated to be present, first in a *certain proportion* (Dr. Henry), then in *as large a proportion as in health*, (Mr. Kane), and finally, under certain circumstances, in *considerable larger proportion* than in health (M'Gregor). M. M'Gregor, for example, found a patient labouring under diabetes mellitus, who had undergone no treatment, passing 1013 grains of urea daily, the quantity emitted by a person in health being but 428 grains; a second patient was found to be passing 945, and a third 810 grains of urea every day. In a patient fed on beef and water exclusively for three successive days, as many as 43 grains of urea were obtained from each thousand grains of urine; the same quantity of healthy urine rarely contains so much as 30 grains." 23.

Allied as it is to diabetes mellitus, this complaint yet differs from it. First, there is no sugar—no new matter—secondly, there is not the same amount of thirst, of voracity of appetite, of dryness of skin—thirdly, it is more curable.

In a case which occurred to Dr. Elliotson, and which was thought to be diabetes mellitus in the first instance: the urine from 16 pints in the 24 hours, was reduced in the course of a fortnight to two pints, mainly through the effect of opium, and ultimately the patient got well, though he continued subject to occasional relapses. In one of Dr. Prout's cases, though the patient's general health was greatly improved under a course of constitutional treatment, this seemed to have very little influence on the peculiar

malady; but a bitter infusion with the addition of potash and tincture of opium, had an immediate effect, and controlled the inordinate and abnormal action of the kidney in a very remarkable manner, so that this patient also recovered, though like the former, he remained subject to relapses, which, however, always yielded to a repetition of the old remedies. A female, aged fifty, had laboured for some time under a diuresis so that she passed as many as 10 points of urine in 24 hours. The urine was of a pale colour, and nearly transparent; it had a faintish odour, reddened litmus, and was of the specific gravity of 1.034. The residuum left after evaporation did not seem to differ from that of healthy urine, but it was greatly more abundant, for it amounted to about 9½ ounces daily, which is fully 8¼ ounces more than in health. This patient recovered completely under the use of chalybeates. Dr. Willis's case did well under the use of an infusion of quassia, and a pill containing equal parts of the compound rhubarb pill and the compound powder of ipecacuanha, five grains of each being taken twice a day. In three weeks, his urine was in smaller quantity than it had been for years, and his health, &c. had undergone a proportionate improvement.

If taken in time, then, the ureous diathesis is far from irremediable. "The system," observes our author, "will even be found to bear bleeding, both generally and locally. When any thing like uneasiness in the lumbar region is complained of, cupping from the loins should not be neglected; and this, succeeded by blistering, bitter tonics, chalybeates and opiates, in conjunction with a regulated diet and attention to the state of the bowels and skin, seems adequate to control the disease, even after it has existed for some considerable time unnoticed, or with its actual nature overlooked."

We must add, for the benefit of our readers, the directions of our author for the investigation of the physical and chemical varieties of morbid urine.

"The general appearance, degree of transparency, disposition to deposit, odour, &c., are to be noted. The specific gravity is then to be ascertained, a piece of knowledge easily procured by means of an instrument,—hydrometer or urinometer, sold in the shops for the purpose.* A given quantity of the urine, say 1000 grains, is then to be slowly evaporated, at a temperature not exceeding 160 or 200 degrees of Farenheit, till it ceases to lose weight. The quantity of extract being ascertained by weight, the proportion of the solid matters to the water will become exactly known. The extract is next to be digested with strong boiling alcohol, (sp. gr. .833) which will take up the urea and salts (the lactates) which are soluble in alcohol. What is dissolved is to be poured off; what remains is to be washed once or twice with a little fresh boiling alcohol, which is to be added to the first. The alcoholic solution is then to be reduced by slow evaporation to the consistence of extract, or till it ceases to lose weight, and its quantity ascertained. The saline mass which was insoluble in alcohol, is to be treated with distilled water at 60 degrees Farenheit, two or three times, and the different solutions being added together and evaporated to dryness, the quantity of saline ingredients,—the soluble chlorides, and alkaline phosphates and sulphates, will be discovered. The insoluble matters, consisting principally

* "Those I have used I had of Elliott, 112, High Holborn. The most convenient apparatus for evaporating urine with which I am acquainted is Dr. Arnott's ingenious and admirable stove. I have reduced many pounds of urine by its means, the fluid never having exceeded the temperature of 100 degrees Farenheit."

of the earthy phosphates which remain on the filter, being dried, are to be weighed. They are afterwards to be digested with caustic potash; and being dried and weighed again, the quantity of mucus or other animal matter will be estimated by the loss of weight, if any, which is sustained. This is as much as is required for medical purposes. For every information requisite in conducting a more minute analysis of the urine, I beg to refer to the excellent treatise of Mr. G. Rees, entitled, 'On the Analysis of the Blood and Urine in Health and Disease.' 8vo. London, 1836." 27.

II.—MORBID STATES IN WHICH THE SECRETING FACULTY OF THE KIDNEY IS LESSENED OR ABOLISHED.—ANURIA (ISCHURIA RENALIS, CULLEN; PARURIA INOPS, GOOD).

Dr. Willis prefers the term anuria to that of ischuria renalis. The latter implies an impeded discharge of urine, whereas the affection is diminution or suspension of the secreting power of the kidney.

We have a familiar instance of diminution of the urinary secretion in acute diseases. It is scanty, high-coloured, and loaded with salts. After severe surgical operations, too, the secretion of urine is often greatly affected. When the suppression continues for any length of time, the case will almost certainly end unfavourably. The anasarca that succeeds scarlet fever probably depends mainly and immediately on deranged function of the kidney. The urine is generally all but suppressed in the earlier stages of the attack, and the albuminous state of the fluid gives strong assurance that such is actually the case.

"A condition of the renal function, and of the urine elaborated, having precisely the characters above enumerated, but without the local mischief, or preceding inflammatory fever to account for it, is a circumstance which is occasionally observed. This occurs most frequently among young children, and has been well described by a pathological writer of high repute on the Continent,* under the title of Urodialysis neonatorum (Harnscharfe der Kinder). I have myself met with the complaint oftener than once. Infants affected in this way, void very small quantities, often only a few drops at a time, of extremely high-coloured urine, which stains the linen of a deep reddish yellow. It seems to be passed with great pain, and very much as if it were molten metal, the little patients drawing their legs up to their belly, and crying bitterly as it comes away, and it very obviously scalds the surface over which it passes, and excites inflammation in the mucous lining of the bladder and uretha, as appears by the increased quantity of mucus which before long begins to be excreted along with the urine. With such a state of things, there is, of course, more or less of febrile excitement associated. The skin is hot and dry, the thirst is increased, and the bowels are obstinately constipated; the feces are only voided in the shape of little round masses like marbles; the digestion, too, is obviously impaired, and the breath smells strongly of vinegar. As in so many other urinary affections, the skin in this one is generally irritable, and the seat of eruptions of different kinds. It is always kept whole with great difficulty; whenever two surfaces are in contact, they almost certainly inflame, and by and by pour out a thin, sharp,

* "Professor Schoenlein, Allgemeine Pathologie u. Therapie b. iii. s. 232, also by Jahn, Verwandschaft der Greises-und Kinderkrankheiten, in Hecker's Annalen, b. xii. s. 129."

fetid fluid, which causes the mischief to spread. Sometimes the cutaneous affection assumes a more determinate form, and appears as psydracious pustules scattered over different parts of the body; these break, and give rise to superficial and often very troublesome sores, especially in the groins, axillæ, folds of the neck, &c." 30.

An analogous affection is occasionally observed among persons in the decline of life. Our author christens it (the term is imported from the German) urodialysis senum. The hard names thicken on us. Were the same plan applied to the diseases of all the other organs we should have a very pretty vocabulary. This method has been used in the diseases of the eye. With them, indeed, it is indispensable, the affections being so numerous and the shades of difference so slight, that arbitrary symbols are more convenient than diffuse general expressions. Yet who, even in the instance of the eye, has not felt that the names were as hard to remember as the things? We greatly doubt the advantage of putting the kidney again in the baptismal fount, and standing god-father to its morbid brood.

Be that as it may the "urodialysis senum" appears to us to be a newer name than thing. It is like plain John in masquerade, with a fine title and a large nose. For, setting aside some accompaniments of a bad appetite, acid eructations, and torpid bowels, we find it either an attack of gravel, or a threatening of gout, such as our "fine old English gentlemen" have had from time immemorial, and all of us have treated without thinking of erecting it into a new disease. However, Dr. Willis gives it yet another name—*anuria pyretica*, to distinguish it from ischuria renalis, which he thinks would be better designated *anuria apyretica.*

His account of anuria or renal ischury is precise. It generally comes in the midst of apparent health. It is most frequent in the young and old. In the adult, the complaint begins with malaise, occasionally some degree of pain in the loins, or flank, or whole of the abdomen—nausea, which goes on to troublesome vomiting. There is at the same time very generally associated a singular degree of torpor both of mind and body, marked by disinclination to motion and to occupation of any kind—the patient has mostly a dull and abstracted look, unless when immediately engaged by those about him. When questioned as to his state, he says he feels very well; and it is generally only when particularly interrogated that he remembers it must be very many hours since he passed any urine. The pubic region is examined, and is found without fulness or pain. To have assurance that the bladder is not distended, he is requested to make water; after some delay, he probably passes a spoonful or two, probably not a drop. A catheter is introduced, and a small quantity, or none, is drawn off. Drowsiness may now set in, and slight incoherence may end in coma. Convulsions follow, and death ensues.

Dr. Willis observes that the progress of the disease, and the intensity of the symptoms, vary considerably in different instances. In the generality of cases, coma occurs about the fourth or fifth day from the time when the secretion of urine is totally suspended; and the fatal termination usually happens after the lapse of a few days more. But the secretion of small quantities of urine, which takes place from time to time in some cases, seems to relieve the system in some sort, and then the disease may go on for a much longer period than it ever does when the function of the kidney is com-

pletely annihilated, Under these circumstances anuria may only prove fatal after an interval of several weeks; or, time being allowed for the employment of the proper remedies, it may finally be brought to a favourable issue. There is a remarkable case related by Dr. Laing, of Fochabers, in which not a drop of urine was secreted for between nine and ten days at least, yet in which the patient ultimately recovered completely. But cases far more marvellous have been related. Dr. Richardson described, in the Philosophical Transactions for 1713, the case of a young man seventeen years of age, who had never made water in his life. The Doctor must be supposed to have been an egregious gull.

Our author offers an explanation of these marvellous cases. They are not worth the trouble. There was fallacy or trick somewhere, and, as in the case of animal magnetism, a man of sound sense will think even the investigation of the humbug thrown away. Le jeu ne vaut pas la chandelle.

We quite agree with our author in the following observations on vicarious discharges.

"With the explanations of such cases that have been grounded on the assumption of vicarious discharges of urine by other organs, I feel free to own my total dissatisfaction. I do not believe that any one organ in the human body can discharge the office of any other. The secretions of particular organs being retained, indeed, the whole body, solids as well as fluids, will show traces of their presence. The duct of the gall-bladder being obstructed, the roots of the nails and whites of the eyes soon became tinged with bile, and the blood and the urine yields its peculiar principles to chemical reagents. The urine not being discharged, the mucus of the mouth and the perspiration may acquire a urinous taste and odour. But that the axilla, umbilicus, mamma, external ear or stomach, ever took on themselves the function of the kidney, and secreted ounces, pints, or quarts of urine, I conceive never to have happened, and hold such an occurrence by the fiat of the Creator in establishing a particular organ for the secretion of urine to be impossible. Since general physics and the laws that regulate the functions of organized beings have been more widely and more carefully studied, extraordinary and miraculous occurrences have greatly diminished in number, and such as do now present themselves at distant intervals are very commonly discovered to be deception. The gentry who pretend to perceive colours by the sense of touch, who live for years without taking food, who pass no fæces and make no urine, are all found out sooner or later to be impostors, and those who believed them to have been of easy faith. When we read, therefore, of the discharge of quantities of unmixed urine from the umbilicus, ear, mouth, &c., we naturally and safely discredit the facts, however respectable the testimony upon which they are announced,—Mrs. Mary Tofts gave birth to innumerable rabbits, if the testimony of one of the very respectable members of the medical profession of his day be but taken. I have heard of a poor girl who habitually vomited fæces well formed, and moulded by the cells of the colon; but she swallowed them previously." 38.

We have again and again protested that if testimony is to be trusted, in opposition to reason, there is no lie be it ever so gross, no absurdity be it ever so palpable, that we ought not to believe implicitly. The analysis of evidence is not gone into by the credulous or the knavish, who retail stories, and *cannot* be conducted by the sceptical who get them at second-hand. It is always safest to doubt what is contrary to experience. If the thing is true, its truth will sooner or later be established, and a little delay is the only or chief evil. But if it is false and we believe it, the mischief that is done is inconceivable.

It is often difficult to assign a cause for the disease. Cold, perhaps, is the most common—violence may give rise to it—so may calculi in the kidney, or in the ureters.

Dr. Willis quotes some cases from authors, but we need not introduce them.

The morbid appearances, he says, discovered in the bodies of those who have died of anuria, have been of different kinds. Generally speaking, the kidneys have been found with the appearances of inflammation, and redder than natural; sometimes their substance has been drier and much firmer than it is in a state of health. In some cases one kidney has been observed to be much enlarged, the other being reduced in size, and either of cartilaginous hardness, or preternaturally vascular. Occasionally these organs seem to have been less the seat of active disease themselves, than the adipose and cellular substance amidst which they lie imbedded.

Occasionally, he goes on to observe, the morbid changes exhibited by the kidneys, appear to have been the effect of the mechanical irritation of calculi, or of gravel filling their pelves, as the antecedent symptoms of the disease were undoubtedly caused by the impediment to renal secretion offered by these foreign substances.

"The liver has been found inflamed and partially softened in some cases of anuria; and it is worthy of observation, that instances of jaundice occasionally present themselves, which terminate unexpectedly in coma, without any great urgency of symptoms, just as we see matters come to pass in anuria. Effusion into the ventricles, and upon the surface of the brain, is another morbid appearance often found in connexion with suppression of the functions of the kidney. The fluid in these cases sometimes had a distinct urinous odour. The effusion in adults would appear generally to be a consequence of the interrupted renal function. Among children, on the other hand, the cerebral symptoms commonly precede the suspended secretion of urine, so that the anuria is but one in the train of symptoms which accompany the formidable disease entitled Acute Hydrocephalus." 48.

It is, perhaps, unnecessary to say more respecting the pathology of the disease than that it is exceedingly obscure.

The treatment is necessarily empirical. We must endeavour, as far as possible, to ascertain the cause of the attack. General bleeding, and the local abstraction of blood by cupping, are serviceable. A succession of large blisters on the loins appears to be positively useful, and the Spanish fly has been recommended internally. Purgatives and diaphoretics with saline diuretics, and infusion of digitalis, diluents, and the warm-bath, constitute the stock of remedies in common use, and advised by Dr. Willis.

"Another, and, in some sort, specific plan of treatment, has however, been recommended by very competent authority—Dr. Elliotson.* This consists in the exhibition of the turpentines, and more acrid diuretics, especially cantharides. Cantharides have, undoubtedly, a very powerful and peculiar effect on the kidneys; and I am not prepared to say that some cases of anuria may not have done well under the use of this active medicine; but as the able practical physician, just mentioned, does not say that he had seen any of the cases upon which his recommendation of cantharides as a specific is grounded, we

* Lectures reported in Med. Gazette.

may be allowed to doubt whether the recoveries which took place where a consequence of its administration.

When we have any clue to suspect the presence of gravel or calculi, in the pelves of the kidneys, or impacted in the course of the ureters, as the cause of the disease, which I have imagined might sometimes be derived from feelings of distention or swelling, such as were complained of in the first period of Dr. Brown's case, it would be proper to associate with the means already recommended, copious dilution with fluids holding the bicarbonate of potash or soda in solution, such fluids being calculated to act on the lithic acid of which renal and ureteric calculi so commonly consist. The vapour and hot air bath would almost certainly be found powerful auxiliaries under the same circumstances. Emetics also, which have been strongly recommended in the treatment of anuria generally, might be prescribed with an especial prospect of proving useful in that form of it, to which peculiar reference is now made." 51.

We proceed to the Third Chapter, on the—

III.—MORBID STATES, IN WHICH THE URINE CONTAINS IN EXCESS AND AS PRECIPITATES CERTAIN INGREDIENTS THAT OCCUR NORMALLY IN SMALLER QUANTITY, AND IN SOLUTION.

Dr. Willis considers sedimentary urine under two distinct heads: first that in which the lithic acid and the lithates, especially the lithate of ammonia, form the precipitate; and second, that in which the phosphatic salts, namely, the ammonio-magnesian phosphate, and the phosphate of lime, compose the deposite.

SECTION 1.—*Of the Sedimentary Urine in which the deposit consists of the Lithic Acid and the Lithates,*—LITHURIA.

We need not particularize the characters of the urine which contains lithic acid and the lithates. As it cools it throws down the latter. Dr. Willis observes that.—

When collected by decanting the supernatant urine, and dried, the lithic acid thus deposited appears in the guise of a parcel of brilliant crystals, which seem to be four-sided prisms, very like sea-sand or muscovado sugar in appearance, but drier and more gritty, of a brownish-red colour of various shades of intensity, being in some cases as dark as wainscot or mahogany, in others of a light brownish-yellow, and in some rarer cases nearly white. These crystals are very little soluble in winter. Dr. Prout failed to dissolve one part of lithic acid in 10,000 parts of cold water. Dr. Henry, on the contrary, states that one part is soluble in 1,720 parts of water at 60° Fahrenheit, a discrepancy which Dr. T. Thompson* very happily explains by supposing Dr. Henry's statement to express the *quantity* of lithic acid which water can dissolve when the attraction of aggregation is destroyed;—Dr. Prout's the *power* which water possesses to destroy this attraction of aggregation. At all events, lithic acid is a very insoluble substance, so much so, indeed, that it has frequently been made a question among chemists to explain by what means it was held dissolved in urine in the quantity in which it frequently occurs in that fluid,

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* Art, Calculus, Cycl. of Pr. Med.

Various explanations of this circumstance have been hazarded. Proust was the first who maintained that the lithic acid of the urine existed in combination with ammonia, and was made soluble in the fluid from this circumstance. This explanation has been adopted by Dr. Prout, who denies, in toto, the existence of free lithic acid in the urine. According to Prout, the lithic acid is always present in combination with ammonia, and occurs as a super-lithate.

"But the simple fact that lithic acid in combination only with a little colouring matter, is constantly deposited from the urine, seems of itself a sufficient answer to this view; and farther it happens, unfortunately for its stability, that the addition of a solution of caustic ammonia to urine, is followed, in the first place, by the precipitation of the phosphates, and after the lapse of a few hours by that of the lithic acid also so completely, that an acid subsequently dropped into the filtered fluid causes no further deposite of this substance. Wetzlar, who particularly insisted on the above facts, in order to get over the difficulty presented by the insolubility of the lithic acid, himself maintained, that it existed in the urine in combination with soda. But lithate of soda is itself so extremely insoluble a salt, that the matter is not much mended by the supposition; besides, later researches in chemistry will not suffer it to be entertained, although it is interesting to know that a solution of lithate of soda will bear a considerable dose of lactic acid, the free acid of healthy urine according to the analysis of Berzelius, without undergoing decomposition. By others, the lithic acid has been held to be rendered more soluble by the presence of the saline bodies which occur along with it as constituents of the urine. But direct experiment is against this notion. I have myself added the purified saline ingredients obtained from 1000 grains of urine, to the like, and even to half the quantity of distilled water, without finding that this solution had any greater power of dissolving lithic acid, or of holding it dissolved, than distilled water itself. Dr. Duvernoy, of Stuttgardt, appears, however, to have solved this difficult question at last. He has shown, as the writer thinks in a very satisfactory manner, that it is upon the presence of the peculiar odoriferous colouring principle of the urine that the solubility of the lithic acid, and even of the super-lithate of ammonia, mainly depends. This inquirer dissolved two grains of lithate of soda in between two and three ounces of hot distilled water. The addition of a few drops of an acid of more powerful affinity instantly caused the precipitation of the lithic acid in small crystaline plates. But on dissolving the same quantity of the salt in a like measure of fresh urine, Dr. Duvernoy found that he could add the stronger acid till the mixture reacted powerfully on litmus paper, &c., without the slightest immediate precipitation of the lithic acid taking place. It was only after the lapse of several hours that the fluid began to grow turbid, and the lithic acid to be deposited in the shape of crystals and impalpable powder. Again, he found that if to a saturated solution of lithic acid in boiling water so much of the proper colouring matter of the urine be added as will give to the fluid the hue of somewhat concentrated urine, the acid, instead of being precipitated as the mixture cools, will continue in solution long after it has become quite cold. Neither does the addition of a stronger acid to this compound fluid, even when cold, cause any immediate deposite of lithic acid; this only takes place after an interval of many hours." 57.

Dr. Willis presents a Table of the Urinary Sediments, compiled from the observations of Dr. Prout and of Messrs. Vigla and Quevenne.* We subjoin the table in question.

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* Etudes Microscopiques de l'Urine; l'Experience, tom. i. Janvier, 1838.

Red crystalline sediment composed of	Lithic acid and the colouring matter of the urine. The crystals are rhomboidal prisms, which in the field of the microscope, appear under the form of pretty regular lozenges, generally of a beautiful topaz-yellow colour singly. Vigla and Quevenne.
Lateritious, red, or reddish-brown Sediment, composed of	Lithate of ammonia; purpurate of ammonia and soda; colouring matter of the urine; and occasionally an admixture of the earthy phosphates. Prout. Lithic acid combined with the colouring matter of the urine. Vigla.
Yellowish Sediment, composed of	Essentially of lithate of ammonia; a little lithate of soda, colouring matter of the urine, more or less of the earthy phosphates. Prout. Lithic acid combined with less of the colouring matter of the urine, than in the preceding form of deposite. Vigla.
Pink Sediment, composed of	Lithate of ammonia; purpurate of ammonia. Prout. Almost wholly of lithic acid; some lithate of soda; animal matter, and a little phosphate of lime. Quevenne cum Vigla.

It is well known that deposites of lithic acid and its salts take place on the termination of febrile paroxysms. Dr. Willis seems to attach more faith than we think they merit to the critical character of these deposites. No doubt they often are critical, but no doubt they frequently are not. We have again and again seen copious deposites of the lithates in cases of suppurative fever, succeeded, not by recovery, but by death.

Dr. Willis passes from the lithic acid diathesis, to the disposition to deposit the lithic acid and its salts as a special disease, and independently of any febrile disorder in the system.

The periods of life at which this diathesis more especially obtains are infancy, and the years between forty and sixty, Every circumstance, particularly at these periods, which tends to occasion an excess in the acid and saline ingredients of the urine must tend also to cause their separation from the state of solution in which they ought to exist. For the lithic acid is nearly insoluble; its salts are very sparingly soluble, even the lithate of ammonia requiring something like 480 parts of water for its solution. Thus, observes our author, we have but to suppose the quantity of lithate of ammonia in the urine to be accidentally tripled, which often occurs, to have of necessity a portion of it thrown down as a solid, the watery menstruum of the urine not being then in quantity sufficient to preserve the whole of the salt in solution. And then it happens that the affinity of the lithic acid for the bases with which it occurs combined, by which its solubility is somewhat increased, is so slight, that even the weakest of the acids, the carbonic, citric, acetic, &c. are powerful enough to dispossess it, and effect its precipitation in a concrete form.

Of all the causes that engender lithic acid none are more powerful than excess of animal and other nutritious food; and of all the causes that effect the separation of the lithic acid, when engendered, none is so powerful as the presence of a free acid in the body. These facts, which we mainly owe to the labours of Dr. Prout, or rather which became more generally known in consequence of those labours, have the most direct and important bearing upon practice.

Dr. Willis observes —

"Do we not in fact see the infant living on a highly azotised and peculiarly animal food, which has further a singular tendency to acescency, precisely the two conditions requisite to the production and precipitation of lithic acid? Can we wonder, then, that urine which deposits lithic acid and its salts, should be common in infancy? especially when we add that the children of the poorer classes who are most obnoxious to this state of urine, independently of their immensely larger relative numbers, are peculiarly open to all the other influences that are held favourable to the inducement of deposition from the urine—such as exposure to cold in consequence of scanty clothing and indifferent lodging, and to derangements of the stomach and bowels from coarse and improper food.

Again, when we regard the age between forty and fifty, the next period in human life that is marked by liability to the precipitation of crystalline lithic acid from the urine, and cast an eye upon the men constituting that larger portion of the community who by the manual labour earn their bread in the sweat of their brow, do we not see the influence of incessant toil beginning to be felt by the system about this time? Exposure to wet and cold has now withered the skin, coarse food has impaired the digestive powers, hard labour has blunted the sensibilities, and the frame, which but a few years before seemed knit to endure for an indefinite period, already shows symptoms of decay. Or, turning to another large class in society, composed of the men who by the exercise of their intellect are girt for the race of life, do we not see the struggle very generally concluded about or soon after the age of forty? It is now that men in professions and general business either discover that they have been using undue exertion, and have suffered in body, or that they first begin to surround themselves with something more than the bare necessaries of existence. The simple meal, hitherto hastily snatched at some lull in the storm of business, now no longer suffices; arduous labour both of mind and body craves relaxation, and long abstinence deserves indulgence. It is now that a man begins to dine in earnest, to entertain his friends, and in his turn to be entertained by them. The stomach is taxed to the performance of unusual duty, and not uncommonly taxed beyond its powers; the blood is fevered by strong drinks of every kind; the nervous system is excited by the presence of company, &c. The pabulum of lithic acid is furnished to the kidney in abundance, febrile excitement leads this organ to exert its peculiar acidifying powers upon the matters presented to it, and imperfect digestion supplies an acid—all that was wanted to bring about the deposition of stone-ware, which now so frequently occurs. Happy if this take place without the body, and not within the pelvis of the kidney!" 63.

The facts embellished by the extraneous ornaments of Dr. Willis have been long known, fully laid down in lectures and in books, and form the canons of belief and the principles of action to the best practical surgeons and physicians. But we apprehend that Dr. Willis has either slightly mis-stated the question, or else that it is generally misunderstood. It is commonly believed that the subjects of stone, or in other words of the lithic diathesis, are the very young and those advanced in life. But it is also believed that it is the

young of the poorer classes and the old of the upper classes. We never conceived that *infants* were particularly prone to this disorder. If the children of the poor then are the subjects of the complaint it is not because their food is highly azotised. It is not during the period of suckling that they suffer, it is when they begin to live on bad and innutritious food, when their digestive organs are disturbed by want of nutriment and by unwholesome nutriment. If highly azotised food in infancy, or even in early life, gave birth to the lithic diathesis and stone, the children of the rich ought to suffer most. All practical men will agree, we apprehend, in stating that they do not.

Luxurious living is, no doubt, a predominant cause of the prevalence of the disease after middle-life in the upper classes. In the lower, the same age displays a similar liability, though not to a similar extent. We conceive that, in this class, and indeed in both, the tendency to organic diseases of the kidney, after the vigor of life is gone, has been too much disregarded in estimating the production of urinary calculi. It is this tendency, which especially renders operations on the old so much more fatal than operations on the young. The concomitant alterations of other organs contribute, of course, to the same effect.

Dr. Willis goes on to remark:—

"Nor is indulgence in large quantities of rich food and strong drinks efficient in promoting a tendency to the deposition of lithic acid merely from supplying the kidney in abundance with the materials for its formation. They are further influential in this direction from causing a positive decrease in the quantity of urine secreted. Not only are the saline and acid ingredients of the urine increased in quantity, but the menstruum in which they are carried forth of the system is diminished in amount. In infancy the deposition of lithic acid would unquestionably be more frequent than it is, were it not for the state of copious dilution in which food is then taken. And it happens fortunately, perhaps, that the unnecessarily large quantities of highly nourishing food in which grown men are so prone to indulge, are mostly associated with pretty copious potations of different kinds; good eating craves good drinking, and wine, beer, and tea and coffee, are always swallowed abundantly to allay the fever which heavy meals of highly-seasoned animal food never fail to engender. Still the urinary secretion even under these circumstances is rarely found to be regularly in the ratio of the liquid imbibed. Animal food and strong drink seem to have a positive repressing influence on the secreting functions of the kidney. Very little urine is passed for twelve or eighteen hours after a debauch in meat rather than in drink. During all this time the function of the kidney is nearly in abeyance, and the salts of the urine are separated *suspended* rather than *dissolved* in that fluid. It has been remarked, too, that carnivorous animals, though they drink water freely, made but very little urine in comparison with the herbivorous tribes, many of which live on succulent vegetables, rarely drink at all, and yet pass large quantities of urine. A knowledge of this fact led Dr. Wollaston long ago to propose that persons liable to gravel should follow a vegetable regimen; and Dr. Pearson afterwards remarked that the calculous concretions of phytivorous animals never contained lithic acid, and followed Wollaston in recommending vegetable diet. The peasantry of Scotland and Ireland who live almost entirely on vegetable matters, often of the coarsest kind, and drink nothing but water, actually labour under a kind of diuresis in contrast with their brethren of England, who live on bacon and cheese, and wheaten bread, and drink little but ale or beer; and lithic urine and its consequences are rare out of the towns both of Scotland and Ireland." 65.

When we reflect on the quantity of water that enters into the composition of the fresh vegetables on which the herbivora live, we cannot be surprised at their urinary secretion being copious. Nor can we be astonished at animal food, which contains so much less water of composition, not occasioning the same amount of that secretion. Yet we doubt whether this principle can be extended to the length to which our author carries it. It is dubious whether a dog does not make as much urine proportionately, as a horse; yet the latter is exclusively herbivorous, and the former mainly carnivorous. It is well known that a horse in stable, fed on hay and corn, makes less water than when he is fed on "green-meat;" in other words, the quantity of urine is more or less proportioned to the quantity of water taken. This appears to us to be a general law in all classes of animals, a law which, in the absence of disturbing circumstances, seems consistent with reasoning and with experience.

We are far from convinced that animal food and strong drink have "a positive repressing influence on the secreting functions of the kidney." One's own knowledge of what happens at a dinner party leads to a contrary supposition. The chamber-pot is usually in requisition much in the ratio of the previous imbibition of good viands and good liquors. The well-worn corner of the outside of a pot-house offers evidence of the same sort. We have seen patients whose kidneys are always stimulated by ale—by coffee—by port wine.

So far as we can judge, stimulating liquors, like others, act upon the kidneys, unless the skin gets rid of the fluid in the shape of perspiration. The great difference seems to be, that if bland fluids are drunk, the urine is aqueous, and if acid and alcoholic fluids are taken it is more or less charged with the salts.

It cannot be expected that animal food should act much on the kidneys. Ex nihilo nihil fit: as that species of aliment has comparatively little water of composition, little water is obtained from it. It may furnish to the kidney an abundant supply of lithic acid, but aqueous urine in quantity is not to be looked for. In short, the kidney may be said to work on what it gets. If much water goes to it in any shape, that water, cæteris paribus, is discharged by it. If other matters, which the kidney is capable of separating go, the kidney, cæteris paribus, separates them. This appears to us a more simple expression of the facts, than the idea that animal food and strong drink positively repress the function of the kidney.

"That *dyspepsia*, or bad digestion," continues Dr. Willis, "in the ordinary acceptation of that term, is the most efficient cause of a lithic state of the urine, as has been so generally maintained, I cannot make up my mind to believe. My observation would lead me to say that there was a greaer amount of weakness of stomach, characterized by heartburn and oppression after eating, in a single agricultural county in Scotland, than could be heard over one half the surface of well-fed England. I have not found the urine of those who were habitual sufferers from dyspepsia, save on very rare and distant occasions, to deserve the epithet of lithic. I am, in particular, on habits of intimacy with two individuals, who in their persons present an epitome of all the symptoms of indigestion in their most painful and aggravated shapes, and the urine, in both cases, though always slightly acid when voided, is almost never high coloured, and seldom or never lets fall any deposite beyond the slight mucous cloud of health; when there is a slight precipitate in from twelve to twenty-

four hours after the urine is passed, it consists of the lithate of ammonia of a pale colour, and in the amorphous state, *i. e.* the crystals are so small that they require a magnifying-glass to distinguish them.

That something else than simple indigestion is at work in inducing a lithic state of the urine and its consequences, calculous complaints, we have evidence in the fact, that whilst in the county of Norfolk one case of calculus occurs for every 21,000 of the inhabitants, and 10 and 12 operations for stone have for many successive years been annually performed into the Norwich Infirmary, the disease seems to be entirely unknown in the county of Hereford, no patient during more than 40 years having been received in the Hereford Infirmary labouring under stone, and no record of the operation of lithotomy ever having been performed within the bounds of the county being extant. In Devonshire, too, the disease of stone appears to be very rare." 66.

Two propositions are here mixed up. One proposition generally maintained is, that indigestion, not in a limited but in a comprehensive sense, is a cause of calculus—another proposition is, that locality, that is a combination of circumstances whose nature is at present imperfectly understood, is also a cause of stone. Each is to be proved or disproved by its appropriate evidence, and proving one (as they are not opposed in their terms) will not disprove the other. Indigestion is thought to be a cause of calculus, because it occurs on a large scale in those classes and at those periods of life on which and when the cause of indigestion operate. Another reason for the same conclusion is, that the symptoms of indigestion frequently precede or accompany calculus. If, in a particular county, where indigestion is not particularly rife, the complaint of calculus is so, that shews, of course, that the excess of calculus in that county is not due to indigestion. But it does not shew that it was not due to indigestion in the other cases. If, again, in another county, stone is scarce, though the average quantum of indigestion exists, that is presumptive evidence of the presence of some modifying circumstance there, but no decisive argument against the operation of indigestion in the other instances.

We freely admit that some, and those prevalent forms of indigestion, occur independently of lithic urine. Nothing, we conceive, can be more true than that. But indigestion is a wide word, and embraces the disturbed functions of many organs. It is difficult to say why one man after living freely gets pimples on his face, and lithic urine—while another is attacked with gastralgia and the blue devils—and a third with an attack of bile. Yet each of them is a phenomenon of indigestion, which usually in particular habits, assumes a particular predominating type. It is surely no argument against indigestion producing lithic urine in B, to urge that the indigestion of A was marked by a sick headache. As well might we tell A that it could not be his Welch-rabbit and ale that had disordered him, because the Norfolk chaw-bacons, who live on hard dumplings, cheese, and sour beer, are remarkable for calculus, and not for sick-headaches.

The fact is, that as digestion is an assemblage of many actions of as many organs, so indigestion is a comprehensive term which may embrace the disordered functions of all, or may signify the deranged condition of one. The kidney is as much an organ of digestion as the bowels. In many cases of dyspepsia, it is difficult to say why the organ that suffers should do so rather than the rest. In many others, we are able to determine the general predisposing, or particular exciting causes, that lead to the derange-

ment of the organ in question. Thus, anxiety of mind and the fatigues of business principally affect the stomach. Sedentary occupations rather induce torpor of the liver or the bowels. Luxurious living breeds lithic acid and disturbance of the kidneys. One is as much indigestion in a wide and philosophical sense as the other. The constitutioual states and the predispositions of the patients differ, the exciting causes vary, the organs chiefly implicated are not the same, but in each case the assimilating process is at fault, and the food is not converted in the normal manner into products or educts of digestion.

Dr. Willis follows out his views, and applies them not only to renal affections, but to other cases which by common consent have long been linked with dyspepsia—for example, gout. It would be injustice to him, as he urges the point strongly, and makes it a sort of cheval de bataille, not to allow him to speak for himself. As we do not coincide with him, this is the more necessary. Nothing can be more opposed to reason and justice than the modern system of reviewing. Cushioning, often garbling or positively mis-stating the opinions of the writer, blazoning at unconscionable length his own, the critic of the present day retails his peculiar crotchets, or vents his private pique, under the garb of an impartial and conscientious censor of scientific truth. This infamous system ought to be put down. Reviewers ourselves, we cannot but feel, and we candidly own, that we have no right to pronounce dogmatic opinions. The reviewer is, after all, but an individual, often a very obscure one. Things seen through mists seem large; and it is the obscurity which shrouds the critic that lends him apparent magnitude and consequence. Could the public view him as he is, they would often find him but a sorry hack.

What right has such a man, what right has any man, to seize the chair of judgment, and try, absolve, or condemn unconditionally his peers or his superiors? Yet this is done without a blush, and the self-constituted tyranny is borne with. We have often thought, what a Falstaff's regiment the batch of periodical critics would make, could they only be paraded in the open day. What dirt, what meanness, what effrontery, what malignity would be marshalled! The fry of this day are the true descendants of the brood that smarted with the lash of Pope.

> ——— A feeble and a desperate pack,
> With each a sickly brother at his back;
> Sons of a day, just buoyant on the flood,
> Then numbered with the puppies in the mud.
> Ask ye their names? I could as soon disclose
> The names of these blind puppies as of those;
> An undistinguished brass their record bears—
> "These are, ah no! these were the gazetteers."

But criticism certainly should not be a mere registering of an author's sentiments. Let criticism be as stringent as it may, but let the public be the judge. The reviewer, if he differs from his author, should expose the latter's sentiments as fully as his own. He may state his dissent, put his plea on the record, and leave the issue to the proper and the just tribunal of the public voice. Nothing, we repeat, can be more absurd or more iniquitous than that a man in a mask should affect to be the sole depositary

of scientific knowledge, and ex cathedrâ denounce or extol the author whom he chooses to call before him.

We return to Dr. Willis, and having offered our reasons for quoting his sentiments, we quote them.

"Whilst I admit then to its fullest extent the influence of diet on the state of the urinary secretion, I am not prepared to say that this influence is engendered through any derangement of the digestive organs in particular, of the nature of that which we characterize under the name of dyspepsia or indigestion. It seems to me a subject of regret, that at the present day so many English writers should be found referring numerous and most dissimilar diseases to a single and similar source. The bias of one indisputably great man has communicated itself too widely in this direction. The digestive organs have had too much to answer for of late years; instead of being the beneficient instruments our forefathers regarded them, furnishing the frame with the pabulum needful to fit it for the discharge of high and onerous offices, they seem of late to have been looked upon as a kind of enemy in the camp, poisoning by their perverse operation the very sources of life, and throwing all the rest of the beautiful machinery of the body out of joint. But surely a indigestion is one thing, and gravel or stone another, and gout a third, and palsy a fourth, and tetanus a fifth, and chorea a sixth, and so on to the end of the chapter. Undoubtedly the digestive organs are simultaneously affected along with every form of general constitutional disturbance, as also with the particular derangements of each and every one of the separate systems of organs which make up the body; but because they suffer, and because their implication is forced in a peculiar manner on our notice, and because we mostly apply our remedies through the channels they afford us, they are not therefore the causes of these disorders. Let us take one in particular, among the host of diseases which it is almost universally the fashion to regard as depending on a disordered state of the digestive functions—*gout*, and ask, What is the actual state of matters preceding and connected with an attack of gout? Up almost to the hour of invasion the individual is generally in a state of unwonted good health; the stomach is doing its duty with alacrity; the body is replete with nourishment, the mind with energy. This individual retires to rest contented with himself, and with every one else, thankful to God, we shall presume, for all his blessings, and promising himself much farther cause for thankfulness in renewed and repeated enjoyment of these blessings. He goes to sleep and is lapped in Elysium. But by and by he is disturbed by uneasy sensations in the hand or foot, and is aroused to consciousness, wondering what can be amiss. The local pain increases in severity; sleep flies his pillow; he becomes restless and ill at ease; his pulse is full, his mouth parched, his skin hot and dry; and the remainder of the night, begun under such favourable auspices, is passed in misery, the patient tossing from side to side of his bed, and finding a resting place nowhere. The healthy man has become suddenly diseased; there is no whole spot about him, no function in his body that is not disordered, and the physician must be summoned. Now, in whatever the disease that has been developed consists, the stomach has certainly had no more part in its production than the heart or lungs, liver or spleen, unless, indeed, as a casuist might maintain, it has been doing its duty too well. A diseased condition of the system, the effect, in so far as we know, of repletition, has manifested itself, accompanied and constituted by quickened circulation, suppressed secretions, disturbed digestion, local inflammation, and the other morbid symptoms, which we are accustomed to group together and call by the name of gout." 73.

It appears to us, that a question of this nature is not to be decided by any general declamation, but by an examination of the several propositions it

includes. When Dr. Willis exclaims that "surely *a* indigestion is one thing, and gravel or stone another, and gout a third, and palsy a fourth, and tetanus a fifth, and chorea a sixth, and so on to the end of the chapter," he makes many affirmations, some of which may be correct and others not. Tetanus for instance may differ much more from indigestion than chorea, and chorea than gout. But the misfortune is that Dr. Willis does not define what he means by indigestion. We should rather suspect that he limits that term to one particular form of indigestion, to that which is characterised by gastralgia, palpable disturbance of the stomach and bowels, and hypochondriasis. If he does so limit the term, his proposition will be more correct than if he does not limit it. That is true enough, but limiting the term is arbitrary, opposed both to physiological and pathological reasoning, and inconsistent with correct generalization. We make these observations for the purpose of shewing how necessary it is, in announcing general propositions, to state explicitly the sense in which the terms are employed. It is impossible in the present case to determine how far we may coincide with Dr. Willis or differ from him.

But he descends to a special case, that of gout, and here we can more fairly meet him. He contends that prior to the attack of gout the individual is generally in unwonted good health, that the *stomach* has usually been doing its duty too well. Here again we perceive the bias of Dr. Willis to the notion that the stomach is *the* seat of indigestion. Surely the whole process of digestion is not performed by the stomach. That plays an important part, it is true, but the liver, pancreas, intestines, kidneys, play parts of some consequence also. Indigestion is a derangement of some part of the process of digestion, an imperfection or alteration of the functions of one or several of the organs which perform that process. This is the fair view of indigestion, this, we think, the view that is generally entertained. If, in ordinary indigestion, the stomach generally suffers most, that is only a matter of degree, a question of plus or minus.

But, taking our author on his own ground, we are far from satisfied that the attack of gout, is as a general rule preceded by unwonted good health. The gouty subject is generally known by his tendency to heart-burn (disordered secretion of the stomach)—to acid urine (disordered secretion of the kidney)—to flying pains—to the usual signs of plethora. Such is the result of our experience. We have not seen gout attack those in perfect good health. If by good health are meant corpulence, a ruddy face, a strong appetite, and good fellowship, undoubted signs of health in the popular creed, then gout does certainly supervene upon it. But, if we may trust our own experience, this apparent health, this actual plethora, covers derangement of the digestive organs characterized especially by the disposition to acidity in the primæ viæ and the urine.

The dictionary of Dr. Copland is acknowledged to be a valuable compilation. It expresses the sum of general experience, and may safely be referred to on a point like this. Let us hear what our excellent and learned friend has to say on the occasion:—

"*Of the premonitory Symptoms of the Paroxysm.*—Although the gouty paroxysm may attack suddenly a person apparently in good health, especially on the first occasion of its appearance, it is more frequently preceded by symptoms of disorder referrible chiefly to the digestive organs. I believe that, if the cases in

which it is said to have appeared suddenly were investigated, it would be ascertained, that more or less disorder had existed for some days before the seizure, although not so as to have excited any concern in the mind of the patient. The most common symptoms of premonition are—flatulence, oppression after a meal, irregular appetite; heartburn, with acidity of stomach, sometimes with acid or acrid eructations; costiveness, irregularity, or, more rarely, an irritable state of the bowels; scanty, deep-coloured urine, becoming turbid or thick on cooling, or sometimes copious or pale urine; a sense of soreness, or occasionally of coldness, at the epigastric region; itching, or irritation of the skin; drowsiness, or frequent yawning, restless or unrefreshing sleep, more rarely nightmare; general lassitude and depression of spirits. In some persons, the symptoms of gastro-intestinal irritation are still more manifest, the tongue being loaded, red at its point and edges, the epigastrium tender, and the stomach oppressed after a meal. In many cases, increase of corpulency; scanty, thick urine; drowsiness, especially after eating, and a sense of general fulness and oppression, have preceded the paroxysm for a longer or shorter time, accompanied by several of the preceding symptoms. The appetite is frequently craving; and when indulged, is often followed by nausea, or vomiting of acrid matter, or by heartburn, flatulency, acrid eructations, &c. The premonitory symptoms vary in different persons, and depend much upon idiosyncrasy. Dr. MACKINTOSH justly remarks, that persons subject to gout are warned of a fit by some sensation or symptom peculiar to themselves individually: one feeling heat, pain, and dryness of the eyes; another, heat, redness, and swelling of the nose; a third, an unusual craving for some particular kind of food, or some peculiar feeling at the stomach, &c. Palpitations or internal flutterings; severe cough, with mucous expectoration; irritability of the bladder, the urine being loaded with mucus; a discharge from the urethra, with scalding, or difficulty in passing the water; unusual lassitude, and inaptitude for mental exertion; peevishness, irritability of temper; depression of spirits, more rarely an unusual hilarity; and various other symptoms, severally precede the paroxysm in different cases."*

We apprehend that the representations of Dr. Copland and ourselves will be found more conformable with general experience than those of Dr. Willis.

We have entered fully upon this question and urged our objections to the views of Dr. Willis. Those views may be said to be peculiar to himself—our objections represent the opinions commonly received. We state them with candour and without reserve, and we are sure that Dr. Willis will admit the propriety of fair and free discussion. By such discussion we may lead him either to modify his opinions, or to confirm them by stronger proofs. As truth is our object, we shall be equally satisfied in either case.

So far as we can see, the following facts would seem to be tolerably certain:—

1. *That*, particular kinds of aliment, liquid and solid lead to the lithic diathesis.

2. *That* the kidney being one of the organs employed in the apparatus and process of digestion, disturbance of its function is, pro tanto, disturbance of the function of digestion.

3. *That*, this disturbance of the function of the kidney, is often, if not generally, preceded or accompanied by disturbance in the other organs of digestion, especially the stomach.

4. *That*, the lithic diathesis is usually attended with acidity in the primæ viæ, and often with the phenomena that characterize the gouty habit.

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* Dictionary of Practical Medicine. Part IV.

We have not touched on an interesting and an important subject, the condition of the fluids in this case. Who that considers the phenomena of plethora, of gout, of lithiasis, can doubt that disorder of the digestive organs is but a part, the initiative and the conclusive, in the circle of vicious actions. Food too highly charged with particular ingredients is introduced into the primæ viæ. The digestive organs form from that food a circulating fluid which must be loaded with the same ingredients. By and bye occurs disorder of one of the eliminating organs. the kidney, or of another, the skin: or of the whole system. Must we not suspect that the view which is restricted to the particular disturbance of skin, or kidney, is a narrow and deceptive one? Must we not conclude, so far as general reasoning can lead us to conclude any thing, *that* a general morbid condition exists, of which these detached disturbances are only parts, and *that* this morbid condition must be sought and found in the blood? With the progress of organic chemistry, we may expect an extension of our present limited pathological views.

Pursuing the causes that give rise to lithic urine, Dr. Willis enumerates—sedentary habits, especially in those who have previously been accustomed to the contrary—injuries to the kidney itself, a circumstance especially insisted on by the late Mr. Earle—the diminished temperature of the body which attends old age.

This latter cause was first pointed out by M. Magendie. By actual experiment he found the temperature of the axilla in men above 60 to be seldom above 36° C. or 96°.5 F. nearly. The urine projected upon the thermometer he found no higher than 30° C., about 86° F., or ten degrees of the latter scale under the temperature proper to the vigour of life. Ten degrees of temperature must certainly have some influence on the solvent powers of the urinous menstruum. These experiments of M. Magendie have been confirmed by others reported by M. Chevallier, who remarked that the temperature of the urine in children was low, that of adults higher, and that of the aged again low. The urine of a healthy man aged 55 was no higher than 33° C., or 91°.5 F.

Another cause of the lithic diathesis is that inherent peculiarity of constitution which is universally admitted to be similar to that which is disposed to gout.

And finally cold, particularly when applied in conjunction with great and sudden vicissitudes of temperature, appears to be an efficient agent in the production of the malady. The county of Norfolk, observes our author, presents generally an exposed aad open surface; the alternations of temperature are great and sudden, and there is no district in England over which the east wind, the dread of the invalid and person of susceptible nervous system, sweeps more constantly or more searchingly than over Norfolk. Suppressions of the cutaneous exhalation, combined with the kind of food generally used, are in all likelihood the potent cause of those derangements of the urinary secretion, which lead to the superabundant elaboration, and deposite of some of its suspended, or dissolved but readily concrescible ingredients, within the body in that division of this country.

Free action of the skin seems incompatible with the lithic diathesis. At all events it tends very powerfully to moderate it.

"The immediate cause of the precipitation of the lithic acid, especially when this takes place within the body, has been variously accounted for. Those who

maintain that the acid exists in combination with ammonia, by which it is rendered more soluble, explain the occurrence readily through the agency of the free acid, which is always present in lithic urine. This free acid, say they, dispossesses the lithic acid of the base with which it is combined, and causes it to precipitate. The soundness of this explanation, however, is very questionable. First, the lithic acid separated from an alkaline base in this manner, is thrown down in a pulverulent or amorphous form, not in distinct crystals, as we perceive it to be, and when its consequences are alone to be apprehended. Then, there are great doubts in regard to the nature of the acid which can be spared to have such an effect. Dr. Prout supposed the muriatic acid to be the agent; but this acid has never been shown to exist in the urine, save already saturated with bases—ammonia, potash, and soda. The phosphoric acid has enough to do in holding the lime with which it is associated in solution. The lactic acid, the free acid of the urine, according to Berzelius, has been shown by Wetzlar to be the least efficient of all the acids in causing the precipitation of lithic acid from its state of solution in the urine. Finally, it is all but certain that the explanation of the precipitation of lithic acid from the urine by the agency of any free acid is erroneous. If the lithate of ammonia often occurs in the urine, it is no less certain that the free and uncombined lithic acid occurs there too. It does not seem necessary to the writer to search so anxiously for a chemical cause of the phenomenon in question. It is enough to say that in certain states of the system, under the influence of peculiar disturbed conditions of the vitality of the kidney, a very insoluble principle is separated in large quantity by this organ, the natural consequence of which is, that its particles, at the moment of their formation, are attracted by their inherent electivity, and concrete into the crystalline forms that belong to them: the precipitation is a *labes vitalis* an error of vitality in the secreting organ, the kidney." 79.

The tendency of the lithic diathesis need not be insisted on. If unchecked, it leads to lithic sand and calculi.

Treatment.—This is well understood. The causes, whatever they may have been, which occasioned the complaint ought, if possible, to be removed. Sedentary habits, high diet, exposure to cold, and light clothing, must necessarily be proscribed.

If the attack is too severe to permit confidence to be placed in regimen alone, cupping on the loins, smart purging, salines, and antiphlogistic diet, should be had recourse to.

"In the first period of a plan of treatment of this kind, it is not uncommon to see a considerable quantity of crystallized lithic acid discharged from the kidney, an event which has been observed to follow with considerable regularity upon the use of some of the ordinary diuretics, such as the turpentines. Whether this discharge of lithic acid is to be regarded as critical, *i. e.* as a kind of materies morbi eliminated from the system by the kidney, or as a simple expulsion from the pelves of the kidneys of a quantity of concrete foreign matter, has been made subject of question among pathologists. In some cases there seems little reason to doubt of the critical nature of the discharge; in others, it is obviously the effect of the mechanical and chemical action of the diluents that are so uniformly prescribed when red sand has been observed to be passed along with the urine. Should any thing like uneasiness continue in the region of the kidneys, after the measures which have been specified have been enforced for some days, it may be well to try the effect of one or two doses of turpentine. If they have the effect of bringing away a quantity of sabulous matter, the relief experienced by the patient is always great; and the good effects of the medicine may be secured by the subsequent use of gentle aperients, diluents, regulated

diet, &c. I do not know that serious mischief has ever actually happened from the attempts which are sometimes made, at all hazards, to induce such an elimination of lithic acid from the kidney, by combining the terebinthinate diuretic medicine with muriatic acid and opium. It seems to me just possible that a course of this kind might lay the foundation of a renal calculus, with all its immediate and prospective miseries. I can hardly conceive a case, therefore, in which I should be inclined to adopt it; certainly not one in which I should persevere with it longer than a day or two. We have better than purely empirical grounds to go upon in the treatment of such cases." 83.

If there has been injury of the kidney, or reason to believe that it has been in any way put severely to the test, repeated leeches or cupping on the loins, and even the insertion of a seton, will be requisite. The benefits of counter-irritation can hardly be over-rated

Mercurial alteratives and gentle aperients are of great utility.

" But there is another, and as it might be truly called, specific plan of treatment that ought not to be neglected in the lithic diathesis. This consists in the exhibition of the alkaline bicarbonates in a state of large dilution, or in a course of one of the mineral waters which contains a bicarbonated alkali among its saline ingredients. Sulphur is hardly if at all more potent against scabies, than the alkaline bicarbonates are influential against a disposition in the urine to deposit lithic acid. Taken at proper times, and dissolved in plenty of water, these salts are perfectly innocuous, and may be continued for months, and even years, not only without injury, but in many cases with great benefit to the general health. From half a dram to a dram of the bicarbonate of potash or soda (the soda is probably the more german to the system) dissolved in from three quarters of a pint to a pint of thin mucilaginous fluid, should be taken two or three times a day according to circumstances, at periods as remote as possible from those at which meals are taken. Immediately before or immediately after a full meal, a large dose of either of these salts will not fail to interfere with the important process of digestion. Schwann* found that they destroyed the peculiar faculty or the Pepsin or the digestive element. Administered at the distance of two hours before a meal, they are abstracted from the stomach and carried off into the torrent of the circulation long before any food is taken, and the digestive process goes on unimpeded by their presence in the blood. If the patient's circumstances permit him to leave his ordinary place of residence or business, and betake himself to a watering-place for a few months, he can do this to greater advantage in no circumstances than when he is labouring under a lithic state of the urine. Our own country is deficient in mineral waters that are peculiarly adapted to such a case. But on the Continent they abound. At the head of the whole may be placed the waters of Vichy, in the centre of France. No mineral water known contains so much bicarbonate of soda as the hot springs at Vichy; an ordinary tumblerful holds in solution nearly eighteen grains of this salt; and two or three glasses taken at intervals in the course of the day, are often sufficient to maintain the urine in a neutral or alkaline state, nay, the mere soaking in a warm bath of the water, is sufficient to produce the same effect.† The waters of Mont d'Or, Carlsbad, Selters, Pyrmont, Obersalzbrunn, &c., have the same effect in different degrees; they each prove beneficial in such cases at all events. Where removal is inexpedient or impossible, we can supply the place of these natural alkaline waters to a considerable extent, by prescribing the bicarbonate of soda or potash in a proper quantity of thin barley-water, or in simple water

* " Ueber das Wesen des Verdauungs-Processes, Berl.; also Mueller's Physiology Transl. by Baly, p. 545."

† " D'Arcet, in Ann. de Chimie, 1826."

impregnated with carbonic acid gas.* Fifteen or twenty grains of the bicarbonate of soda, dissolved in two ounces of water, having a half-pint bottle of our ordinary soda-water (water charged with carbonic acid gas) poured over it, makes an artificial mineral water that is extremely pleasant to the palate, and is taken freely by patients." 86.

It is rather singular that Dr. Willis makes no mention of colchicum in the treatment of the lithic diathesis. Yet perhaps there are no remedies, not even excepting the alkaline bicarbonates, more useful than it is. The combination of colchicum with the liquor potassæ is extremely valuable. There are several other medicines and combinations of medicines, of service in this malady, to which Dr. Willis fails to allude. We cannot consider his remarks on its treatment comprehensive.

We conclude the examination of the lithic diathesis, by quoting the directions for the chemical examination of lithic acid and its deposits.

A known quantity, say 1000 grains of the urine, after it has stood for several hours, is to be poured upon a filter of fine bibulous paper, and the fluid separated from the solid parts. Another portion of the urine may be tested for any additional lithic acid it may contain, by having a few drops of muriatic acid added to it. The precipitation of the lithic acid may always be immediately secured by drying well and warming gently the glass vessel into which the urine about to be examined is poured, or by rubbing the inner surface of the vessel containing the urine after a few drops of acid have been added to it, with a rod of wood.* The colour of the deposites is best ascertained whilst they are still wet upon the surface of the filter. The fluid portion is to be treated in the manner already recommended at the end of the first chapter, by which the amount and relative proportions of the principal classes of ingredients will be ascertained,

To examine the nature of the deposites, let a known quantity of any of them be boiled with distilled water, by which any alkaline lithates will be dissolved. The solution being evaporated to dryness, a portion of the extract should have a few drops of nitric acid poured upon it; this will occasion the solution with effervescence of the lithic acid and the lithates. The nitric acid solution being dried by the application of gentle heat, the pink colour characteristic of the purpuric acid (formed by the action of the nitric on the lithic acid) will be evolved, and this tint will immediately pass into a bright purple on the addition of a little caustic ammonia. By this means we detect lithic acid. Another portion of the extract being mixed with some caustic lime, if it contains ammonia, this will be discovered by the smell, or by approaching a rod dipped in muriatic acid to the mixture. A third portion of the extract must be burned over the flame of a lamp in a platinum spoon, and the residue tested for alkaline re-action. The nature of the alkali found, whether potash, soda, or lime, is discovered by urging the residue for

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* The following is the Receipt in the French Codex for the artificial Vichy water: Carb. of soda, 1 dram, 56 grains; chloride of calcium, 11 grains; chloride of sodium, one-third of a grain; sulph. of soda, 6 grains; sulph. of magnesia, 3 grains; sulph. of iron, one-third of a grain; water, deprived of air, 20 oz., carb. acid gas, 3 volumes and a half.

* Wetzlar, l. c. who found he could obtain a deposite of lithic acid by this means, in many cases where the simple addition of an acid failed to produce it.

a moment with the flame of the blow-pipe. If it be soda the outer flame will be coloured yellow. Potash and lime are distinguished by the solubility of the former in distilled water; or should the lime exist in the caustic state, when it forms an oxide of the base and becomes soluble, by passing a current of carbonic acid gas through the mixed solution, or adding a few drops of a solution of oxalid acid, it will immediately fall. The presence of the earthy salts—the ammonia-phosphate of magnesia, and the phosphate of lime—is known by the insolubility of the deposit in boiling distilled water, and by its ready solubility in dilute acids, from which the earthy bases are precipitated on the addition of an alkali. The relative proportion of the differently soluble lithates and the insoluble phosphates may be ascertained by digesting a known weight of the mixed precipitate in a sufficient quantity of attenuated caustic potash, or soda, which takes up the lithates, and leaves the earthy phosphates behind.

A recent great improvement in the analytic investigation of urinary deposits, introduced in the service of M. Rayer, and well described by M. Vigla, is the examination of these with the microscope.

We pass to the second, the remaining section of this Chapter, on—

Sedimentary Urine in which the Deposite consists of the Earthy and Earthy-Alkaline Phosphates.

The earthy phosphates are only held in solution by the excess of acid with which they are combined, or in consequence of the presence of some other free acid in the urine, which can in many cases be demonstrated to be the carbonic. The *neutral phosphate of lime** is a salt to all intents and purposes insoluble. *Phosphate of magnesia*, another urinous salt, is not very soluble, requiring at least fifty times its weight of water to take it up. *Phosphate of ammonia*, indeed, is soluble enough by itself, but in combination with the phosphate of magnesia, as it always exists in urine, it becomes exceedingly insoluble. A slight excess of phosphoric acid, and, as it would appear, the presence of carbonic acid in some cases, put an end to the insoluble character of these salts; as super-phosphates or carbo-phosphates they become readily soluble, and are safely carried out of the system.

The phosphatic sediments may occur either in the crystallized or amorphous state. In the former case the crystals are white and glistening, and their formation is frequently accompanied with the precipitation at the same time of a certain quantity of the amorphous lithic sediment. The lithic deposits are consistent, we need scarcely say, with apparently robust health, and plethora. The phosphatic diathesis is well known to be just the contrary.

At first, the phosphatic state of the urine is generally found to alternate with that in which the cream-coloured or pale-tawny amorphous lithic sediment occurs. By and bye the lithic deposits are observed less frequently, and, when the constitution is quite broken, not at all.

The urine is always pale-coloured when passed—secreted in excess—sometimes weakly acid when first voided, or neutral; as the disease increases, it never fails to become alkaline. It passes very rapidly into putrefaction.

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* Dr Henry reckons the quantity at as much as half a grain to each ounce of healthy urine. Elem. of Chem. vol. ii.

"Its specific gravity varies greatly according to the period of the day when it is examined; I have found it as low as 1,004 in the early part of the day, and and as high as 1,033 about eleven o'clock at night, the time when I have always found the urine to possess the highest density." 92.

Crystals of the phosphates are rarely deposited within the body. Yet every now and then we find a stone with a phosphatic nucleus. The outer laminæ of stones are very commonly phosphatic. Crystals of the ammonio-magnesian phosphate constitute white sand.

The amorphous phosphatic sediments are much more common. Phosphatic urine is either a consequence of grave constitutional disturbance, or of great irritation or structural disease of some of the urinary organs. It occurs among the exhausted and unhealthy, and is a constant sequence of other diseases of the urinary organs. The irritability of system and constitutional disturbance that preceded or accompanied the diathesis are aggravated as it proceeds.

"The urine in this state of affairs is not only disordered in quality; it is often secreted in excessive quantity, sometimes to the extent that has been noticed under the head of hydruria. It is always pale-coloured, and if transparent when first voided, which, indeed, is rarely the case, it grows turbid as it cools, and lets fall an abundant precipitate of a white impalpable powder, consisting of the combined phosphates of ammonia and magnesia, and phosphate of lime. If brought to the boiling point, a flocculent deposite takes place, which has often been mistaken for albumen, but which consists principally of the phosphate of lime, as is immediately made manifest by the addition of a few drops of nitric acid, which re-dissolve the precipitate and restore or give complete transparency to the liquid. On standing, it hardly ever becomes perfectly transparent. Even within a few hours it is covered on the surface with a delicate pellicle, which is often iridescent, and on the lower surface of which well-shaped crystals of the triple phosphate of magnesia and ammonia are rapidly formed and sink through the fluid when it is disturbed, or when they become so heavy as to break away from the film. The urine anon becomes ammoniacal, and then the deposite goes on still more rapidly than before. Sometimes it is alkaline even at the moment it is voided; in any case, and when the temperature is between 50° and 70° F. it is not long before it begins to putrefy, and to evolve ammonia in abundance." 95.

The facts here stated have been pointed out by two or three observers, and have been known for some time to most who are conversant with urinary diseases.

We observe nothing particular in regard to treatment, with the exception of a very heterodox opinion on the subject of bread. "Bread," says our anthor, "that is six or eight hours out of the oven,—a French roll within one hour after it has been drawn, is, according to my experience, far more easily digested, and also much more nutritious than that which is two days old." We doubt whether many converts will be made to this doctrine. The common experience of us all would seem to have decided against new bread. Our author considers the lighter French and Rhenish wines objectionable, as having a decided tendency towards the kidneys. We have certainly seen them agree very well in cases of alkaline urine, and we have also seen them disagree. Dr. Willis recommends a glass or two of dry old sherry, that wine which, of all others, ought to be under deep obligations to the faculty, for it is prescribed on almost all occasions. Dr. Willis speaks particularly in praise of the fine Spanish wine called amontillado.

Dr. Willis remarks—

"The present very prevalent custom adopted in England from our continental neighbours of using *lavements*, as a means of evacuating the bowels, ought not to be so much encouraged as it is. Nature sent us into the world without a glyster apparatus; and if the lower bowel be for a while hindered of its proper office, it will cease from its duty of expelling the matter accumulated within its cavity." 99.

We cannot say that this mode of reasoning is convincing. Nature sent us into the world without many other things besides glysters, which yet are acknowledged to be useful. No doubt it is absurd for an individual whose bowels act well spontaneously to resort to glysters. But if aperients are requisite, and a glyster will answer, surely it is a more innocent remedy than a stimulating purgative substance. But this does not seem to us the right method of considering or determining the matter. The bowels are torpid. To remedy that state we must ascertain on what it depends. It may be on deficient action of the liver, of the small intestines, of the large. Glysters are of little service to those who labour under torpid livers—of great advantage to those whose large intestines allow fæces to collect and inspissate in them, without any adequate efforts to expel them. This is the practical view we should take. Some persons derive great advantage from glysters, others find little benefit from their employment.

On the whole, the methodus medendi advised by Dr. Willis is a repetition of what has been so forcibly insisted on by Dr. Prout.

We may sum up the principles and items of treatment at no inordinate length—light, nutritious diet—"amontillado"—gentle aperients, to the exclusion of mercury and of saline medicines—opiates to quiet the urinary apparatus—then, "some one or other of the articles which experience has shown to possess a kind of specific influence in allaying irritability of the urinary organs, particularly the uva ursi, pareira brava, and alchemilla arvensis. An extract of the uva-ursi, combined with extract of hyoscyamus or opium, according to circumstances, has been strongly recommended by Dr. Prout. The Ferrum sesquichloridum of the last London Pharmacopœia, or its tincture, is an excellent chalybeate; and when the phosphatic diathesis can be obviously referred to affections of the urethra, prostate, or bladder, the ferrum ammonia-chloridum, or its tincture, may be substituted, and will be found an invaluable medicine"—and, lastly, country air, and the encouragement of cheerfulness and hope—such is the category of remedial measures.

We would merely offer one or two observations. We have seen the phosphatic diathesis, certainly not in a marked degree, ensue from high living. A gentleman was in a situation in which he had a good deal of corporeal exertion, and lived moderately, taking animal food only at his dinner. A rather sudden change occurred. He took animal food twice or thrice daily—drank more wine—took less regular exercise. His urine now became alkaline. A repetition of the same circumstances has always subsequently produced alkalescence. Moderate living, active exercise, and only a glass or two of wine, render the urine acid. It is now generally disposed to be neutral, yet if this gentleman walks eight or ten miles daily it grows even high-coloured. In this case the circumstances that usually occasion lithic urine

give rise to the phosphatic. The gentleman is not strong, and has used a fair share of mental exertion.

We have seen in some cases, certainly not always, much benefit from sarsaparilla. Occasionally it disorders the stomach. The infusion with infasion of rhubarb has agreed when all other forms have failed.

If on the subject of the lithic and phosphatic diathesis, little is added by our author to what had been previously given to the world by Dr. Prout, it is because it would be impossible to add much. The progress of chemistry may correct some errors on the part of that gentleman, fill up some deficiencies, modify some opinions. But his work will still remain a model of the philosophical application of chemistry to medicine, and a standard work on the subject that it treats of.

We must now pause in our examination of the Treatise of Dr. Willis. That gentleman is a man of extensive information and of judgment. The length to which we have already proceeded is an earnest of our estimate of his own talents and the value of his work. To expect novelty on such a subject and after what has been written on it by men like Marcet, Prout, Brodie, &c., would be unjust. But Dr. Willis has thrown together what has at different times and by different men been given to the public, and has added the reflections of an observant and cultivated mind.

We shall pursue in our next number the analysis of this volume, and we shall present an epitome of the actual state of information on diseases of the urinary organs—an epitome which, we conceive, will be far from useless to the practical portion of our readers.

We have not hitherto availed ourselves of the work of M. Rayer. We received it rather late, and have deferred until the succeeding article,* a particular reference to its contents.

The work itself is extremely valuable. The plates are highly finished, the scheme comprehensive, the details minute.

M. Rayer is one of the few French authors who have any thing like a pretension to acquaintance with English medical literature. The consequence is, what might have been anticipated, that M. Rayer's works are much more practical than those of most of his countrymen. From his pen we have not mere mysticism, generalities, abstractions, and transcendentalism, but that substantial information adapted to the common purposes of life, and constituting useful knowledge.

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* In our next Number.

Des Maladies Mentales, considere'es sous les Rapports Medical, Hygie'nique, et Me'dico-Le'gal. Par *E. Esquirol*, &c. &c. &c. Accompagnées de 27 Planches Gravés. Deux Tomes. Paris, chez J. B. Bailliere, 1838.

On Mental Disorders, &c. By *E. Esquirol.* Two Volumes 8vo., with 27 Engravings; Paris, 1838.

(Continued from No. 58.)

In our last number we presented a sketch of M. Esquirol's account of the symptoms and causes of insanity. We take up that account at the progress and treatment of the malady.

M. Esquirol observes that almost all the insane whom he has seen presented some disturbance in their functions for a longer or shorter period previously to the attack. The majority had had acute cerebral inflammations, convulsions, headaches, colic, cramp, constipation, or menstrual irregularities. Many too had displayed mental peculiarities of some description —great intellectual activity—violent passions—whimsical ideas, affections, or actions; and so forth.

M. Esquirol justly remarks that the first palpable outbreak of insanity has generally been preceded by indications of it which escaped attention. The insane frequently struggle against their hallucinations, long befefore they become apparent to the world. The habits, tastes, sentiments of the insane, have been changed before the actual outbreak occurs. That outbreak is frequently considered the commencement and the source of the disorder, when, in point of fact, it is but the denouement of what has been long forming. A man gave himself up to extravagant speculations which failed. He went mad. In point of fact, he was mad before his failures. A man became outrageously evangelical, assisted at a meeting from which he issued in a state of terror, believing that he must be damned. It was not the sermon that turned his head—it was turned already. A young nobleman set off on his travels for several years, eight days before his wife was to be confined. Some annoyances happened en route, and in six months he was stark mad. But was not the very journey the first act of madness? M., aged 64, of a nervous temperament, had always led an irreproachable life. He began to go frequently from home, under the pretence of taking walks. His wife grew uneasy, and directed his valet-de-chambre to watch him. The servant traced him to a brothel of the lowest sort. On the slightest hint of the discovery, he flew into a paroxysm of fury, which, in five days, ended in dementia.

We consider these remarks, and these illustrations, fraught with practical value. They bear on a point which may be said to be at present under discussion in this country—whether patients are too soon and too often, or too late and too seldom subjected to restraint as lunatics. Our own opinions have been often expressed—are expressed in another part of this Journal.* We are glad to perceive that we have the sanction of Esquirol's

* See the Periscope of this number.

immense experience in the view which we have taken. It is scarcely possible, in this country at all events, for a sane man to be incarcerated as a lunatic; but it constantly happens that lunatics are allowed to go abroad as sane men.

Insanity may be continued, remittent or intermittent.

Continued insanity has regular phases, at least acute and accidental insanity has them. Those phases or epochs are three;—a first acute, with concomitant symptoms—a second chronic, unmarked in general by any symptoms, save the illusion—a third, that of the decline and cure. These successive periods are not observed in idiotcy nor in dementia.

Remittent insanity presents remarkable anomalies both in its character, and in the duration of the remission. In some cases, the remission is only the transition of one form of mania to another. Thus an insane person, passes three months in the condition of lypomania, the next three in that of mania, and four, perhaps, or thereabouts, in that of dementia. Thus these forms may appear in succession, sometimes with regularity, sometimes with very great variations. A lady, aged 52, is one year lypomaniacal, and one year maniacal and hysterical.

In other cases the remission exhibits only a diminution of the symptoms or the kind of madness. Thus some maniacs are only violent at certain times of the day, or on certain days, or at certain seasons. With other madmen, melancholia is only overwhelming at intervals, the insanity being usually of some definite kind, combined with the gayer passions. The seasons, menstruation bring on the same symptoms, the same illusion, the same excitement, and the same depression.

Intermittent madness is quotidian, tertian, quartan, monthly, annual, or with intervals of several years, The intermission may be regular or irregular. If the former, the same season, the same causes, resuscitate a disease with the same character, the same crisis, the same duration as before. Most commonly the paroxysms recur after irregular intervals, are provoked by new causes, do not affect the same form. It may explode at once, or be preceded by symptoms similar to those which ushered in the first attack.

Besides the conversion of one form of insanity into another, several forms may be combined; melancholia, for example, with mania—dementia with mania and monomania.

Insanity is often complicated with cerebral lesions, such as chronic inflammation of the membranes, paralysis, convulsions, epilepsy, hysteria—or with affections of the lungs, the heart, the intestines, or the skin. These latter affections may have preceded the complaint, and ceased when it appeared, or they may concur or alternate with it.

Intercurrent or epidemic maladies may attack the insane, and exert a greater or a minor influence on their mental alteration.

M. Esquirol, who certainly strikes us as in many respects a Hippocratist, leans to the doctrine of crisis in insanity. He ranks them as either physical or moral. They are only observable in monomania, melancholia, mania, or acute dementia.

Insanity may terminate by resolution. The restoration of the natural complexion and expression of the features, bodily lassitude, sleep, the restoration of the secretions of the skin and of the excretions, the re-establishment of healthy moral feelings:—such are the precursors of recovery. This

is complete if reason returns, if habitual evacuations are re-established, and if old habits and the natural character are resumed. But if the bodily functions are restored, and the mental alienation persists, or the "moral sensibility" is not re-established in the same proportion with those functions, the mania or the monomania will become chronic, and degenerate into dementia.

Sometimes insanity terminates in obesity, the former declining as the latter augments. But obesity combined with a persistence of the alienation is a sign of dementia. On the other hand, extreme emaciation is also a termination of insanity, the patient only regaining his reason "when he has absolutely knocked at the gates of death." M. Esquirol is quite convinced that this emaciation is a critical termination of insanity, not a mere effect of it. He mentions a case in corroboration of his view.

Case. Madame ——, aged 51, had had several attacks of mania, as a consequence of severe afflictions, each attack ceasing so soon as she became extremely emaciated. An intermission occurred of two years' duration, when she grew extremely fat, and appeared to have attained the very pitch of good health. This was the signal of a sudden outbreak of insanity, which lasted for some months, diminished when emaciation commenced, and ceased when this had gone to some extent.

M. Esquirol assures us that he has often witnessed cases of a similar description.

He cites authorities to prove that insanity often terminates in fever—and in hæmorrhoids. The first menstrual flux is sometimes critical—the cessation of the menses decidedly is so. M. Esquirol has seen several women recover their reason on the cessation of the catamenia. He has seen too the re-establishment of the menses put an end to insanity, as uterine hæmorrhages, leucorrhœa, gonorrhœa, have done. Coitus and seminal discharge have proved critical; so have gestation and lactation. But M. Esquirol is of opinion that marriage has been too hastily recommended for insanity. It is not nearly so often advantageous as is supposed, and sometimes it aggravates the evil.

Cutaneous affections assume some importance in relation to insanity, from the circumstance that their suppression causes insanity, and that the insane are very prone to them. M. Esquirol agrees with Hippocrates in believing that the itch proves critical. He attempted to communicate it to a soldier, who had fallen into dementia and paralysis after the repression of scabies. But he neither gave the soldier the itch nor cured him. Boils followed by a pretty copious discharge often terminate insanity; but enormous atonic formations of matter never have that favourable effect. When suppressed ulcers cause the disorder, their re-establishment cures it.

Perfect and Pinel relate the cure of insanity after swelling of the parotid. A woman aged 40, at the Salpetrière, who had become maniacal from alarm at a thunder-storm, lost her complaint on the occurrence of an enormous enlargement of the submaxillary glands; she fell into a profound state of stupor, which subsided with the subsidence of the glandular swelling.

Lafontaine read to the Society of Goettingen, the history of an insane person, who, after the lapse of several years, was cured by the extirpation of a cancer in the breast.

Salivation is a very common occurrence with the insane. Many seem on the point of spitting, yet no saliva appears. Salivation may be critical.

It is the same with the flow of tears, Cutaneous transpiration is a much more frequent termination of insanity than is commonly supposed. It is on this account that the season of Spring, and that warm-baths tend towards the production of a cure.

Vomiting of mucous matters of a yellow or a dark colour, and alvine dejections of the same character, often terminate insanity, especially melancholia. The expulsion of worms has been attended with the same result. But it does not therefore follow, as M. Esquirol rightly observes, that insanity depends on gastro-intestinal irritation. Many diseases whose seat is remote from the abdomen, are relieved by abdominal evacuations. This is no doubt true, yet abdominal irritation may prove the exciting cause of insanity, in persons predisposed to it.

One form of insanity may run into another, and thus the latter may prove critical to its predecessor. In some individuals, insanity is succeeded by hypochondriasis, or hysteria. M. Esquirol has never seen insanity cease on the supervention of epilepsy. Epileptiform convulsions announce encephalic lesion, and bode the death of the patient.

M. Esquirol examines the question, whether strong moral impressions may not cure insanity. He mentions several cases. We shall select one or two.

Case A young lady fell into melancholia because she was disappointed in marrying her lover. She refused all nourishment, and lapsed into a state of marasmus. After some months, her lover appeared before her with the assurance that they would be shortly married. She was cured.

Case 2. A lunatic refused all nutriment, because honour forbad him to eat. After ineffectual attempts for some days to conquer his resolution, an ordonnance was taken to him, with the forged signature of "Napoleon," commanding him to eat; and absolving him from all imputations on his honour if he did so. The lunatic read the order, hesitated for some hours, obeyed, and was saved.

Some further cases and several reflections end in the conclusion, on the part of M. Esquirol, that moral treatment is of great efficacy in cases of insanity—a conclusion reasonable in itself, and the foundation of the great improvements that have been affected in the management of lunatics in this country.

M. Esquirol next examines the proportions of cures and deaths in the disorder. We shall advert to this point and to the data in which it rests, more particularly in an article on the statistics of lunacy. We may merely state generally at present, *that*, the number perfectly cured is about one-third of the affected; *that*, the proportion ranges under the influence of circumstances, locality, and so forth, from one-fourth to one-half; *that* the cures are more numerous in France than in England, and least numerous in Germany and Prussia. M. Esquirol insists on this point for the double purpose of repressing the ostentation of the English in reference to their treatment of insanity, as well as that for giving a gentle rub to his countrymen, who think that whatever is foreign is best. This is certainly a new

character for our French neighbours to appear in. We never before heard that accusation urged against them. M. Esquirol would stare could he be transplanted to this country, and observe how prevalent the cacoethes that he mentions is here.

But the period occupied in obtaining the cure is as important a consideration as the cure itself.

M. Esquirol has constantly observed that the mania reaches its height, and begins to decline during the first month. It is during the first month, compared with all succeeding ones, that the greatest number of cures are obtained.

The mean duration of insanity has been fixed by Pinel at between five and six months. Mr. Tuke, in his report of the Retreat at York, has extended the period considerably, and M. Esquirol agrees with the latter. His own observations, founded on admissions into the Salpetrière, lead him to conclude—*that*, the greatest number of cures are obtained in the two first years;—*that* the mean period of cure is rather under a year;—*that* after the third year, the chances are 30 to 1 against cure.

But M. Esquirol warns us against despairing of a case of insanity, however ancient, and however unpromising. Without referring to cases recorded by others, he has himself seen several instances of recovery after a long period. A young lady had been for ten years in a state of dementia, attended with suppression of the catamenia. One day she jumped up and ran to embrace her mother, crying out—"Mamma I am quite well." Her menses had begun to flow spontaneously, and her reason was re-established. M. Esquirol has twice seen insanity disappear at the turn of life, in women who had been insane from their earliest youth. But still it must be owned that these fortunate cases are rare.

The greater number of recoveries are observed in Spring and Autumn.

The most favourable age for recovery is between twenty and thirty. After fifty a cure is rare.

Mania and monomania are more curable than melancholia. Chronic dementia is seldom cured. Idiotcy and dementia senilis are incurable.

Some lunatics are curable only to a certain point. They are so susceptible to mental impressions, that the slightest causes occasion a relapse. Seclusion in a retreat alone preserves their reason. The mental powers of others are so shaken, that they are unable to resume their parts in the world, although they are not irrational. Recoveries of this kind bear the proportion of about one-twentieth to the rest.

But it not unfrequently happens that individuals considered cured by their friends and even by their medical attendant, have still some lurking remains of their malady. M. Esquirol mentions several cases of this sort. We may quote one.

Case. A lady cured apparently of an attack of suicidal melancholia with paroxysms of mania, passed a month at Paris, in order to recruit both mind and body, and then returned to her family. Every one felt convinced of her perfect restoration to reason. A year afterwards her husband was seized with apoplexy. The shock, and the necessity for exertion, in order to prevent ill consequences to her children, dispelled insane ideas which had occupied her mind during a whole year of apparent restoration to reason.

It is a general opinion that relapses after recovery from insanity are very common M. Esquirol thinks their frequency over-rated. He estimates them at one tenth of the recoveries. Relapses are more frequent amongst the poor than the rich, for the obvious reason that the former can less effectually guard against the exciting and indeed predisposing causes of the disorder. Even the relapses that do occur, might, in M. Esquirol's opinion be, in a great measure, avoided.

Our author agrees in the main with those who believe that insanity tends to shorten life, although there are many instances of longevity on the part of lunatics.

The mortality will seem greater in establishments in which lunatics are received indiscriminately, than in such as select the cases most likely to be cured. This, according to M. Esquirol, explains the comparatively low mortality in the hospitals of London and York, and the comparatively high rate at the Salpetrière, the Bicêtre, and the Charenton.

The mortality is greatest in Autumn and Winter. In this latter season the causes of ill-health and disease are most rife, and lunatics, like other people, must naturally suffer from them.

While the age from twenty-five to thirty-five is that which is most favourable for the production of insanity, from thirty to forty is the period in which the mortality is greatest. This is particularly the case with men. With women the deaths are most numerous between the ages of forty and fifty.

M. Esquirol's estimate of the mortality is as follows:—

Taking insanity in general, he ranks it at from 1 in 6 to 1 in 8.
In Mania, it is 1 in 25.
In Monomania, 1 in 16.
In Melancholia, 1 in 12.
In Dementia, 1 in 3.

Idiots are incurable, and seldom live beyond thirty or forty years,

Acute accidental mania is seldom fatal. Simple melancholia, even when characterised by the inclination to suicide, is only mortal when produced by an organic lesion, or when complicated with severe disease. Dementia being the final term of all the forms of mental alienation, is the most frequently fatal. It is often combined with paralysis, and it is this circumstance which renders the mortality at the Bicêtre and Salpetrière so high.

Causes of Death.—The principal alterations which cut off the insane are meningitis, cerebral fever, apoplexy, lesions of the brain, thorax, or abdomen. Two-eighths of the fatal terminations are laid by our author to the door of cerebral affections, exclusive of epilepsy and paralysis—two-eighths to diseases of the thorax—three-eighths to diseases of the abdomen. Notwithstanding that Greding and Munro affirm that marasmus and dropsy of the chest destroy the greater number of lunatics, the examination of the bodies of six hundred patients has not led M. Esquirol to the same conclusion. He has found the thoracic less numerous than the abdominal lesions.

Melancholia often ends by low nervous fever. Sometimes the patients obstinately refuse to quit the bed—sometimes they crouch upon the ground. Some obstinately refuse all nourishment—others eat with frightful voracity. They emaciate, fall into extreme debility, are attacked with fever marked by nocturnal exacerbations, and diarrhœa often comes to accelerate their fate.

The phthisis which complicates mania, and more particularly melancholia, has been noticed by many observers. M. Esquirol has frequently seen it precede or appear along with it. The phthisis, in these cases, is very likely to be overlooked. The mental alienation augments even to the end. It is not the exertions of the lung in their vociferations that produce the phthisis, for this is a more frequent attendant on melancholia than on furious mania. Sometimes insanity alternates with phthisis, and the latter subsides during the paroxysm of the former.

Scurvy is another very common concomitant of insanity. It is no doubt due to bad management. We willingly believe that at present it is rarely seen in this country, and that it will ultimately disappear in all. Insanity there must always be—scurvy need not exist.

Half of the insane who die, especially the monomaniacs, are paralytic. Apoplexy is another disease which often destroys the insane. Of two hundred and thirty-seven individuals, thirty-seven died apoplectic.

M. Esquirol gives the following table of the diseases which proved fatal in 277 patients.

Adynamic Fever	32
Ataxic Fever	14
Cerebral Fever	28
Low Nervous Fever	25
Pleurisy	12
Phthisis	28
Latent Peritonitis	13
Colliquative Diarrhœa, Scorbutus	38
Hydro-pericarditis	11
Scirrhus of the Pylorus	4
Organic Lesions of the Liver	35
Apoplexy	33
Epilepsy	4
	277

On what Cerebral Alterations does Insanity depend?—This important question is almost answered by an admission of ignorance on the part of M. Esquirol. He offers, however, a general summary of the results hitherto obtained in this inquiry.

1. Malformations of the cranium are only observed in imbeciles, idiots and cretins.

2. Organic lesions of the encephalon or its envelopes have only been observed in those whose insanity was combined with paralysis, convulsions, epilepsy. The lesions belonged to the complication, not to the insanity.

3. The sanguineous or serous effusions—the injections or infiltrations—the thickening of the membranes—the ramollissement, induration, tumors of the encephalon, &c.—all these alterations indicate the causes or the effects of insanity, or rather the effects of its complication with the malady which proved fatal to the patient.

4. The alterations of the thorax, abdomen, pelvic cavity, are evidently independent of insanity. Yet they may point out the organ whose alterations first disturbed the brain.

5. All the organic lesions found in the insane have been found in those who have never exhibited insanity.

6. In many instances, examination of the body after death has led to the discovery of no alteration, although the insanity had existed for years.

7. Pathological anatomy shews us each part of the encephalon altered, or destroyed, without the occurrence of insanity.

8. From all these data we may conclude, *that* the immediate cause of insanity is beyond our means of investigation; *that* the disorder depends on some unknown modification of the brain; and *that* it does not always originate in the brain, but in some of the seats of sensibility placed in the various regions of the body. This may seem discouraging, but if true, should be well known. Perhaps, as M. Esquirol observes, an exact acquaintance with the immediate cause of insanity would not help us much in the treatment of it. Probably, if we were exactly acquainted with the subtle condition of the nervous system which produces pain, we should not be able to lull it one whit better than we do.

Prognosis of Insanity.—Imbecility and idiotcy are never cured.

Monomania and melancholia, when recent, accidental, and independent of organic lesion, are curable.

Mania is more curable than monomania and melancholia.

Acute dementia is sometimes cured—chronic dementia is rarely cured—and senile dementia never.

Hereditary insanity is curable, but relapses are more probable than in accidental insanity.

Chronic insanity is with difficulty cured, especially after the second year; the difficulty is augmented in proportion to the length of time the causes have operated prior to the occurrence of the malady.

However long the insanity may have existed, recovery may take place while palpable derangements of the the corporeal functions exist.

If the moral causes have been sudden in their operation, the prognosis is more favourable, than if they have acted gradually.

If insanity has been produced by excess of study, the prognosis is unfavourable, especially when errors of regimen have been combined with the over-exertion of the mind.

Insanity dependent on religious excitement, or on pride, is seldom cured.

Insanity kept up by hallucinations is very difficult of removal.

When the insane are well aware of their condition, yet are not promptly cured, the prognosis is unfavourable.

When the insane recover their bodily health, yet evince no progress towards mental restoration, we must not be sanguine of their recovery.

When the senses of the insane are so enfeebled that they can look upon the sun without uneasiness, and have lost smell, and taste, &c., they are incurable.

Insanity is incurable when the consequence of scurvy, or epilepsy. Its complication with these diseases and with paralysis is invariably fatal.

Such is the summary of data for prognosis, with which M. Esquirol presents us.

We pass to the *treatment.*

The leading objects are to calm their passions—to remove the mental

infirmity or aberration—to remove the physical disturbance. Each case must be studied—the causes of the disease investigated—the character of the patient determined. There is no specific treatment for insanity. As the causes of the malady are moral or physical, the means of treatment must be physical and moral too.

Separation of the Insane.—M. Esquirol adds his opinion to the weight of sentiment in favour of the separation of the insane from their friends. He remarks that strangers who become insane in Paris are more easily cured than the Parisians, because they are more completely separated from old scenes, faces, and associations of ideas. This is now so generally admitted that it is useless to argue on it.

It is certainly singular, that the insane are usually most suspicious and conceive the greatest aversion for those who were previously dearest to them. Before strangers they will often be calm and rational, while they are evincing the very reverse of calmness and of reason to their relatives and friends.

As a general rule, M. Esquirol prefers confinement of the insane in an establishment to confinement in private. In point of fact, he has found that they are more easily cured in the former than in the latter situation. We need not enter on the why or wherefore. No doubt, it is the variety, the withdrawal of the insane from himself and from his own sensations, that facilitates recovery in the public establishment.

But M. Esquirol admits that there are instances, in which separation of the insane from friends is not advisable.

An establishment should have but one Director, and he should be a medical man. If the directors are more numerous, authority is divided, and that obedience so necessary for the advantage of the insane is apt to be interrupted.

It is not easy to determine the period at which confinement should terminate. Great judgment and tact are requisite on the part of the medical man. If separation has been maintained for some time without effect, M. Esquirol advises that the relatives or friends should be permitted to visit the patient. The visits should be sudden and unexpected, in order that the effect on the patient may be considerable. But during and after convalescence, great prudence should be exercised in permitting and in regulating the visits of friends. As a general rule it is better to sin on the side of too long than on that of too short a confinement.

At the commencement of insanity, the mental alienation is difficult to be distinguished from, and likely to be confounded with, febrile delirium. Wherever there is any doubt, it is better to wait and allow the affection to develop itself fully, before any measure like confinement is determined on.

In dementia and idiotcy, confinement is only necessary for the prevention of accidents, and for the safety of the individual. Maniacs and monomaniacs must necessarily be confined. Poor lunatics must, for obvious reasons, be so too. But confinement does not suit some cases of melancholia.

M. Esquirol gives one caution—not to enter on long arguments with the insane. They should be addressed in accents of reason and kindness, but their insanity will assuredly not be put out by syllogisms.

Music.—The ancients vaunted its effects. M. Esquirol has employed it He has very rarely seen patients cured by it. Yet it calms and composes the mind of the lunatic. M. Esquirol, however, has seen it produce fury—in one case, because the madman swore that all the notes were false; in another, because he was incensed at the idea of any one's amusing himself in the vicinity of such an unfortunate as himself.

The Theatre.—Both reason and experience contribute to prove, that in madness "the play is" *not* "the thing." While theatrical representations were permitted at the Charenton, one seldom occured without some outbreak of delirium or relapse. In three instances, to which he refers, M. Esquirol selected both the patients to take, and the theatrical representation they were to witness. One of the patients was a young convalescent whom he escorted to the opera-comique. He saw nothing but his wife flirting with men. Another, after a quarter of an hour, felt his head hot—"let us go out." said he, "or I shall relapse." A third was a young lady whom he accompanied to the opera. Seeing the actors armed with swords, she thought that they were going to fight, and it was necessary to take her out to prevent mischievous consequences.

Travelling.—M. Esquirol speaks favourably, on the whole, of this remedy. He has always observed that the insane are relieved after a long journey, especially if they have visited foreign countries, and have had their attention awakened by new scenes. Convalescents too find benefit from travelling. It occupies their thoughts, and can form the subject of their conversation to their friends.

M. Esquirol next proceeds to physical treatment; the preceding remedies have been of the nature of moral ones.

The abode of the insane should be chosen in reference to the general and well-understood conditions of salubrity. It is a great blunder to imagine that the insane do not feel atmospheric vicissitudes. Their constitutions are enfeebled, and they *do* feel them sensibly.

In acute insanity the spot should be open, but the residence should be retired. In chronic insanity the same degree of retirement is unnecessary. In melancholia the retreat should be pleasantly and, if possible, picturesquely situated. If the insanity has appeared in a hot climate, the return to a cold one may reasonably be expected to prove beneficial.

Dress.—The insane, especially melancholics, should be warmly clad; frictions of the skin and the use of flannel are of service. In sleeping the bed-clothes should not be too cumbrous, and the head should be, in general, bare.

Diet.—On this head we perceive nothing to extract, save a warning of M. Esquirol's against the custom pursued in some hospitals, of distributing, in the morning, the food for the day—a custom so manifestly absurd and objectionable that it is unnecessary to do more than denounce it.

The majority of maniacs and of monomaniacs are devoured with thirst. Appropriate drinks should be allowed them in sufficient quantities.

Gardening and Farming. M. Esquirol speaks in high terms of this species of occupation There can be no question that experience has decided generally in its favour.

At the Salpetrière, the females are employed in a systematic manner. There is a large room in which some are occupied in sewing, others in knitting. Some perform the necessary domestic offices of the establishment —others cultivate the garden.

It is difficult to occupy individuals of the upper classes in this manner. This interferes with their recovery, and goes far to neutralise the advantages they possess in other respects.

Removal of the Cause of the Insanity, if possible.—M. Esquirol raises his voice against empirical treatment, that is, against any *one* mode of treating insanity. In this, as in most other disorders, the physician should ascertain if possible the physical or moral cause of the malady, and, if possible, remove it: and his treatment should be also regulated by the nature of the existing symptoms.

If there are excitement and plethora, the antiphlogistic treatment and regimen should be adopted. Almost always, at the expiration of 8, 15, 21, or 30 days, an intermission or remission takes place, and then, combined of course with appropriate moral management, the particular indications of the case should be investigated and acted on. Thus, says M. Esquirol, the patient has been long subject to hæmorrhoidal discharges, which have ceased to flow; the physician re-establishes, or endeavours, to re-establish them. Or an ulcer has healed prior to the occurrence of the monomania; the ulcer must, if possible, be re-opened. It is the disposition, on the part of M. Esquirol, to dwell on circumstances of this description, circumstances which, though not unimportant, are erected by him into too great importance, that leads us to deem him a decided Hippocratist. His leaning to the doctrine of critical days, indeed the whole tenor of his observations, would induce us to place him in the category of the followers of the médecine expectante.

But suppose that measures of this description have proved unavailing. The time is come for " empirical remedies."

Water.—This has been applied in all varieties of manner.

M. Esquirol thinks that tepid baths, of the temperature of 20° to 25°, (we presume of the centigrade-scale,) are most useful. They may be prolonged for several hours in the cases of thin, nervous and irritable subjects. If there is much determination of blood to the head, bladders, filled with cold water may be applied to the head at the time that the rest of the patient's body is kept immersed in the bath.

The cold bath is adapted for young and robust subjects who suffer with heat. Of the warm bath M. Esquirol speaks hesitatingly. He does not appear to have had much experience with it.

The plunging bath and cold affusion are of service to patients who are enfeebled, particularly by masturbation, or by long-continued mental annoyances. The bath of surprise has never been made use of by M. Esquirol, but he is acquainted with fatal results from it. He thinks it would be quite

as rational to prescribe pitching the madman out of a three pair of stairs window, because one or two have been cured after a fall on the head.

The douche is mainly useful in young, strong patients, affected with cephalalgia. It ought never to be intrusted to servants, nor administered shortly after a meal, nor ought it to be continued for more than a few minutes. The primæ viæ should be cleared out prior to its use. It is not totally exempt from hazard.

Ice to the head calms cephalalgia and furor, especially at the commencement of the attack, and when combined with immersion of the feet in hot water, or in a mustard poultice.

Pediluvia are of service. They may be composed of hot water with salt, sal ammoniac, mustard, &c. The water should not be too hot at first. If it is, the kind of shock occasioned reacts upon the cerebrum. The water should be made gradually hotter after the immersion of the feet in it.

Lavements, the douche by the rectum, and copious potations of cold water by the mouth, have been recommended and employed. M. Esquirol seems to speak seriously of the benefits of drinking cold water freely in cases where there is a tendency to suicide.

Evacuants.—M. Esquirol responds to the general opinion in favour of emetics. Yet he does not think that remedies of the class of evacuants are adapted for all cases. He is of opinion, and no one can object to it, that the particular purgative should be adapted to the case. He remarks that some patients refuse medicine, protesting that their bodily health is very good. A very good plan is to give such patients, without their knowledge, some substance which will disorder their stomach or bowels, and by rendering them uneasy respecting their health, will conquer their indisposition to physic.

M. Esquirol strongly reprobates the abuse of bleeding—an abuse which has been productive of much mischief to the insane. He has seen a madman bled thirteen times in forty-eight hours. Yet moderate bleeding is occasionally both rational and serviceable, and the local abstraction of blood by leeches, or by cupping, is, in cases of cerebral determination, of undoubted benefit.

Tonics and Antispasmodics.—Of great use in particular cases, in which there are indications for them.

Narcotics.—M. Esquirol reprobates them.

Counter-Irritation.—Not serviceable in the majority of cases, in which it only torments.

Electricity and Galvanism.—M. Esquirol has only in one or two cases seen the former of benefit.

The Circular Swing.—It is universally abandoned.

We shall return to M. Esquirol's work, and select particular subjects for notice. Our readers will be put in possession of his vast experience on one of the most important of human maladies.

STATISTICAL REPORT ON THE SICKNESS, MORTALITY, AND INVALIDING AMONG THE TROOPS IN THE WEST INDIES. From the Records of the Army Medical Department, &c. Presented to both Houses of Parliament, 1838.

IF such records as these had been made and preserved during the tumult, carnage, and destructive sickness of the late war, medical statistics would have been vastly enriched. But the past cannot be recalled; and great credit is due to the Army and Navy Medical Departments for the accuracy and authenticity which they have infused into the reports transmitted to them from all parts of the world. The volume before us is among the first fruits of this energetic system; and the labours of Mr. Henry Marshall, and Captain Tulloch, who compiled this report from upwards of 160 folio volumes of returns, accumulated at the Army Medical Board since 1816, are above all praise. These gentlemen have had a most laborious and difficult task to perform, but the result is a highly interesting and valuable document; especially to all those who are destined to visit the pestiferous but beautiful Isles of the Antilles.—From such condensed documentary reports, filled with numerical details, it is no easy matter to draw up an analysis—indeed it is next to impossible; but we shall be able to introduce to our readers a great mass of information respecting the West Indies, which cannot fail to prove interesting even to the practitioner of the remotest village in England.

The Windward and Leeward Islands extend from 6 to 17 degrees of North latitude, and from 56 to 63 degrees of West longitude—stretching in a chain across the great Gulf of Mexico and differing greatly in climate, aspect and salubrity. Thus Tobago, Trinidad, St. Lucia, and Dominica, are mountainous, covered with dense forests, and intersected by deep ravines, impervious to the breeze, and where the rains stagnate among a mass of decaying vegetation. On the other hand, Antigua and Barbadoes are comparatively low barren, and rocky, with dry climate, and agreeable temperature. Some other islands possess a kind of intermediate character, while the coast of British Guiana is totally different from all—being an immense tract of level country, scarcely above the surface of the sea; presenting, during the rainy season, an endless succession of swamps and marshes, with an exceedingly humid atmosphere, though not very variable temperature. The following leading characteristics of these interesting regions are worthy of note.

"1st. The first peculiarity which distinguishes the climate of this Command is a high temperature, a necessary consequence of proximity to the equator. The mean height of the thermometer throughout the year is however, rather under than above the average of similar latitudes, being only about 80¼°. In none of the islands is it above 82° or under 79°, and any slight difference in this respect results more from their geological features, or extent of cultivation, than the mere difference of latitude; as the mean temperature of British Guiana in latitude 6°, is but 80¼°, while that of St. Kitt's, more than 12 degrees further to the North, is 81°.

2d. The next peculiarity which extends to this, as well as most tropical regions, particularly of insular situation, is great uniformity of temperature. The difference between the highest and lowest mean range of the thermometer, is, even in the most variable of the islands, only 13°, and in some it is not more

than 4° throughout the year; whereas in Britain it is, in most years, upwards of 30°.

3d. In this, as well as other tropical climates, there is but little change in the elasticity or pressure of the atmosphere. The extreme range of the barometer is not more than from a quarter to half an inch throughout the year, and it is not materially affected even by hurricanes; whereas, in this country, its range is from two to three inches, and it varies with very slight change of weather.

4th. One of the most marked of the atmospherical peculiarities of these regions, is the large quantity of rain which falls annually, being, on the average, at least three times as much as in Britain—a necessary consequence of rapid evaporation under a tropical sun. The quantity, however, varies materially in the different colonies, according as their surface is mountainous or level, clothed in wood, or cleared and under cultivation. We have, in a subsequent portion of this Report, stated the fall of rain in each colony, so far as it has been ascertained by measurement; the average quantity, throughout the whole Command, has been estimated at from 60 to 70 inches annually.

The rain of these regions is, however, of a very different character from that of Britain, being confined principally to two seasons of the year, termed the Spring and Autumnal rains, and then falling not in gentle showers, but in torrents, which, unless in a very dry soil, or where there is free drainage, speedily inundate the surrounding country.

5th. The four seasons of temperate climates are therefore represented by two wet, and two dry seasons; but, as the rains follow the course of the Sun, it is obvious that the period of their commencement and duration must vary according to the proximity of the settlements to the equator. In Guiana, the most southerly, the Spring rains generally extend from December to January, the Autumnal from May to August, while in the most northerly of these settlements, the former does not commence till April or May, and the latter extends from October to December.

In many of the islands, particularly the less hilly ones, there is scarcely any deposition of the dew, and in the others it is generally scanty, except in densely wooded districts.

6th. In regions exposed to such a high temperature, it is fortunate that the heat of the day is generally modified by a sea breeze, not of that variable character which prevails in temperate climates, but which blows with nearly uniform force, and from one direction, during nine months in the year. It is termed the Trade Wind, and generally comes from the East and its collateral points, except from August to December, when it veers round, and blows slightly from the South and West, with frequent calms at intervals.

While this Trade Wind prevails during the day, a land wind, in all the large and mountainous islands, blows with almost equal regularity at night; for as soon as the sea-breeze dies away, the hot and rarified air of the plains, ascending to the mountain tops, is there condensed by the cold, and flows in a steady current towards the ocean, to supply the equilibrium of the atmosphere. In the smaller islands, and those in which there are no mountains, there is either no land wind, or it is very slight. The sea breeze generally sets in between 10 and 11 A.M., blows with increasing force till 3 P.M., and dies away about sunset, when, after a short interval, the land wind commences, and continues till sunrise.

In these and some other tropical regions, in similar latitudes, hurricanes are occasionally experienced between the month of August and latter end of October, hence denominated the hurricane season. Trinidad, Tobago, and the settlements to the South have hitherto been exempt from them, but they sometimes fall with dreadful violence on the other islands. Barbadoes, in particular, has suffered very severely from their ravages.

During the rains, particularly at their commencement and termination,

thunder and lightning are very common, but seldom occur at any other period of the year. Unfortunately little has been done to investigate the electrical condition of the atmosphere in these parts of the world, and therefore we can only estimate the presence of that agency from its visible effects at these periods." 4.

From several statistical tables inserted here, it appears that, among every 1,000 white troops, there have been annually admitted 1,903 into hospital, so that, on an average, every man must have been under medical treatment, about once in six months and a half. In the United Kingdom the proportion is about one in thirteen months—or just one half. There is a still greater difference in the ratio of severity. In the West Indies there is one death in every 24 admissions, while at home there is only one death in every 67 cases treated. The following table is very curious, and we shall insert it here.

	Admissions.		Deaths.	
	Total among whole Force in 20 Years.	Annual Ratio per 1000 of Mean Strength.	Total among whole Force in 20 Years.	Annual Ratio per 1000 of Mean Strength.
Fevers	62,163	717	3,195	36.9
Eruptive Fevers	13	— 2-10	1	—
Diseases of the Lungs	9,975	15	906	10.4
" of the Liver	1,946	22	161	1.8
" of the Stomach and Bowels	36,474	421	1,795	20.7
" of the Brain	2,447	28	312	3.7
Dropsies	659	7 8-10	180	2.1
Rheumatic Affections	4,202	49	17	
Venereal Affections	5,043	35	6	
Abscesses and Ulcers	17,708	204	18	
Wounds and Injuries	11,149	129	60	2.9
Punished	4,327	50	2	
Diseases of the Eyes	7,686	89	4	
" of the Skin	559	6	1	
All other Diseases	2,884	30	145	
Total	164,935	1,903	6,803	78.5

The reader will not fail to remark on the frequency of pulmonary affections, as compared with hepatic diseases or disorders, even in a tropical climate, where the biliary system is supposed to bear the brunt of the malignant influence of such portions of the globe. Affections of the lungs are nearly as 8 to 1 compared with affections of the liver—and the ratio of mortality is nearly the same. Now in the East Indies the proportions would be very different. Hepatic would far outnumber pulmonic complaints. The great proportion of fevers to other diseases is very striking. Sixty-two in every 164! Two-fifths of the fever admissions were intermittents—few of which proved fatal. In the low marshy settlements of Demerara and Berbice, the number attacked in each year being frequently equal to the whole

force employed! In Trinidad, too, intermittents are very numerous. Since 1827, only one case of "yellow fever" (febris icterodes) is returned! This results from the arbitrary classification of fevers—many medical officers considering "bilious remittent fever," as a better name than yellow fever.

In respect to the pulmonary affections, though the admissions under this head are less than at home, in the proportion of 115 to 148, yet the mortality is greater—10½ per thousand of whole strength having perished by lung affections. The average per thousand in the United Kingdom was 8½. In the West Indies, 1,023 cases of consumption occurred in an aggregate strength of 86,661—being 12 per thousand annually. In the United Kingdom, the proportion was 5½ per thousand! Inflammation of the lungs and chronic catarrh are twice as prevalent in the West Indies as they are at home—"shewing how little effect a mere increase of temperature has in modifying these diseases."

HEPATIC AFFECTIONS, though by no means so numerous as in the East Indies, were yet nearly three times more frequent than in Europe—and five times more fatal.

GASTRIC AND INTESTINAL AFFECTIONS prove a most fertile source of sickness in the West Indies—being about 421 annually out of every 1000! In England the proportion is only 95 per thousand annually—and very mild—causing only one death in every 2000 of strength. In the West Indies the mortality is 21 per thousand—more than 40 times more than at home! The chief form is chronic dysentery, one-fifth of the cases proving fatal. The greater number of acute dysentery and diarrhœas prove ultimately chronic, and fatal in the above proportion. Gastritis and enteritis prove also extremely severe in their character, and fatal in their effects.

DISEASES OF THE BRAIN comprehend inflammation, headache, coup de soleil, hydrocephalus, apoplexy, paralysis, epilepsy, fatuity, mania, delirium tremens. At first sight this class would appear to be very prevalent and fatal—the admissions and deaths being nearly four times as much as in Great Britain. More than half of these cerebral affections, however, have resulted from *delirium tremens*, the direct consequence of intemperance, and this last the consequence of the facility of procuring rum.

DROPSIES. The admissions and deaths under this head are very great, in proportion to those at home—being nearly as eight to one. Most of these dropsies are the sequences of fever.

The other classes of disease offer nothing particularly interesting, the mortality being very low. We shall only notice one circumstance. The ratio of venereal affections in the West Indies is 35 per thousand men annually. In Great Britain it is 181—or nearly eight times greater at home than abroad! In the East Indies and Mauritius venereal affections are even more prevalent than at home. This dissimilarity is inexplicable, except by some peculiarity in the climates of the two hemispheres.

BLACK TROOPS. There being no statistical records of the mortality of the

Negroes in Africa, it is difficult to ascertain the influence of a West India climate on them. The average mortality, however, is supposed to be more than in Africa; and, consequently, that the West India climate is unfavourable even to the blacks. It is found, indeed, that black troops, wherever they may be located, as in the Mauritius, Ceylon, &c. present a greater rate of mortality than other troops. The negro corps in Ceylon soon became extinct! The mortality among the negro slave population in the West Indies, is 1 in 33 annually—which, however, is very much less than amongst the negro troops.

BRITISH GUIANA.

This comprehends the British settlements on the rivers Essequibo, Demerara, and Berbice. It is in Lat. 6, and Long. 56-60, being about 200 square miles. The soil is deep alluvial, the rich deposits of the foregoing rivers. The country is, of course, as level as the ocean; and but little elevated above its surface. It is principally covered with dense forests and rank grass. In the rainy season much of it is inundated. The climate is, as one would expect, extremely moist. The medium range of the thermometer is 80 degrees, and the land-winds are loaded with vegeto-animal miasmata. The average mortality among the troops, from 1817 to 1836, was 84 out of every thousand annually. In the black corps it was only 41 per mille. Bowel-complaints are not so prevalent here as in most other West India stations; but diseases of the brain, especially delirium tremens, were enormous—owing to rum.

TRINIDAD.

This island is separated from the great American continent by a narrow strait, only 12 miles across. It is about 70 miles long by 50 broad. Its mountains rise to 3,000 feet above the sea, broken into the most rugged masses, and clothed to their summits with majestic forests. The island is well watered; but the greater part of the interior is uncultivated. The nights are cool and pleasant; but the daily temperature is about 80°.

Among the white troops the ratio of annual mortality has been 106 per thousand. This high rate has been chiefly caused by fevers and dropsies. A severe epidemic fever in 1818, cut off nearly a third of the force on the island.

TOBAGO.

This island lies close to Trinidad, and appears from the sea like a mass of dark abrupt precipices. The climate and seasons are much the same here as in Trinidad, but the atmosphere is much more humid. The soldiers have been, in general, very unhealthy in this island. Thus, on the average of 20 years—1817 to 1837, the mortality has amounted to about 153 per thousand of white, and 34 per thousand of black troops *annually!* This is nearly double the mortality of the Windward Islands generally, as well as the Leeward. The great cause of mortality is fever—next, gastro-intestinal affections—and thirdly, pulmonic complaints.

GRENADA,

Is a small island, with mountains of 3,000 feet. It is more cultivated than most islands of a mountainous character—the soil of the vallies is very rich. The average annual mortality among the white troops, has been, for 20 years past, 61 per thousand. The climate of this island is, therefore, more favourable to life than the general average of the other islands in the West Indies. The deaths annually were, by fevers, 26—by gastro-intestinal affections, 16—by pulmonary affections 6 per thousand.

ST. VINCENT'S.

This is a small island, 18 by 11 miles—the central mountains 4,000 feet in height. There is a considerable space of level ground on the coast, affording rich crops. The island is of volcanic origin, and a violent eruption took place in 1812. The mountains are clothed with immense forest trees, with very little jungle or underwood. The ventilation is not therefore impeded. The vallies are wide, and free from excessive vegetation, presenting a character of salubrity to the experienced eye. There is very little swamp on this island, but it is well watered by numerous rivulets. The atmosphere is humid and rain is common during most part of the year—the average quantity that falls being from 70 to 80 inches. The dews are very heavy. The heat is nearly the same as in the other islands. The ratio of mortality has been found to be 54 per thousand per annum, The climate is, on the whole, more salutary than the usual run of the West Indies. In the list of maladies, the gastro-intestinal affections are more than double of the fevers, being as 180 to 83. This is very remarkable.

BARBADOES.

This island is 22 by 16 miles in extent. It rises from the level of the sea by a succession of terraces to the height only of 1,100 feet. It presents a much more barren and inhospitable aspect than the other West India islands from the sea. The soil is light, calcareous, and absorbent. The fall of rain is only 58 inches annually, and the dews are light. The thermometer ranges the usual height, but the heat is not at all oppressive. The trade wind, from the South-east, blows both day and night, but very feebly after sun-set. In the first four or five months of the year, it is strong and regular; and the climate is healthy and pleasant. June, July, and August are hot and disagreeable—and, in the latter month, the hurricane season commences; but fortunately is not of frequent occurrence. The average mortality among the white troops, during the last 20 years, has been 58 per thousand per annum. That of the blacks was 46 per mille. Diseases of stomach and bowels were to fevers as 498 to 282. The lungs were as 379 to the above numbers. Liver 34—brain 80, dropsies 58.

"From this it appears that the principal causes of mortality among the white troops have been diseases of the lungs and of the bowels. The deaths by the former are considerably above the average of what prevails throughout the whole

Windward and Leeward Command; but it must be kept in view that, as Barbadoes is the station to which invalids are generally sent, for the purpose of obtaining a passage to England, many of those labouring under consumption, contracted in the other islands, have died there, and, no doubt, increased the mortality by diseases of the lungs much beyond what could properly be attributed to the climate of that island. Diseases of the bowels constitute more than a third part of the whole deaths, and seem not to be diminishing of late years either in frequency or severity. They proved most fatal in 1817, when dysentery was extremely prevalent, particularly in the 2nd, or Queen's Regiment; so much so that about the middle of the year, nearly half of that corps were in hospital from it. Various means were adopted to protect them against the influence of this disease, but without effect." 28.

ST. LUCIA.*

This island is 32 miles in length, by 12 in breadth, and lies about 40 miles to the north of St. Vincent's. Basseterre, the lowest and best cultivated portion of the island, abounds in swamps and marshes. Capesterre, on the contrary, consists of abrupt and picturesque mountain scenery, resplendent with woods, and intersected by numerous ravines, too narrow to admit ventilation, and replete with moisture and miasmata. Rains are frequent for nine months of the year; during the other three the weather is pleasant. The ratio of mortality among the troops during the last 20 years is as follows:—Whites 122 per mille per annum! Blacks 42 ditto. Ratio of diseases, fevers 304—gastro-intestinal complaints 189—pulmonary 60—brain 21—liver 5—dropsies 9. All other diseases 3.

From this it appears, that fevers and bowel-complaints produce terrific havoc in this island. St. Lucia, indeed, has always been noted for the insalubrity of its climate.

DOMINICA.

This island is 29 miles by 16, and lies midway between the French islands of Martinique and Guadaloupe. It very much resembles St. Lucia in its physical characters. The mountains rise to 5,000 feet in some places. It is of volcanic origin. The mortality has been 137 per mille per annum among the white troops, and 39 among the blacks. Gastro-intestinal affections 332—fevers 233—pulmonary 39—hepatic 8—brain 25—dropsies 3—all other complaints 9. Thus more die of bowel-complaints than of all the other diseases put together!

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* We are going more into details than English readers may think necessary. But these statistics are of exceeding value; and as medical practitioners are often consulted in this country respecting the climate of the West Indies, it is politic that they should possess a little more than the vague notion that these islands are, as Jonathan would say, "tarnation hot and unhealthy." Pulmonary invalids very often go now to Barbadoes, Jamaica, and other islands, under the idea that consumption cannot exist within the tropics. These facts will give them a little clairvoyance on the subject.—*Rev.*

ANTIGUA AND MONTSERRATT.

The latter island is only a dependency of the former, and distant from it about 22 miles. Antigua is comparatively flat, the greatest elevation being 1,210 feet. Much of the surface is barren—some of it swampy—and the climate is characterized by dryness—the average fall of rain not being more than 45 inches. Montserratt is more mountainous, having, in some places, an elevation of 2,500 feet. This island is noted for its salubrity. The average mortality in these two islands was 40 per mille per annum among the whites, and 28 ditto among the blacks. The mortality among the whites is not more than half the average mortality of the West Indies generally. The proportions were:—fevers 120—pulmonary 73—gastro-intestinal 74—liver 23—brain 15—dropsies 11. All others 11.

It will be seen from this, that though the mortality by all complaints put together is low, the pulmonary scourge maintains its ground.

The islands of St. Christophers, Nevis and Tortola, present nothing remarkable. The ratio of mortality amongst the white troops was 71 *per mille per annum* Fevers 244—stomach and bowels 60—pulmonary 55—liver 13—brain 16—dropsies 5. All others 19.

JAMAICA.

This island lies 900 miles west of the Islands or Command which we have noticed. It is 170 miles in length by 50 in breadth. The range of mountains throughout its length rises in some places to 8,000 feet—nearly as high as the Great St. Bernard among the Alps. This range being nearly east and west, forms a complete barrier between the north and south sides of the island. On approaching from the south, the immense mass of blue mountains burst on the view—their lower range crowned with wood, and sloping down to a plain of ten or twelve miles in breadth along the coast, on which the principal towns are built. The soil is red and rich, and watered by innumerable streams. On the north side, there are few plains, or level surfaces of any extent: the ground rises from the sea by a succession of acclivities, separated by wide valleys, the hills being conical, and studded with thick groves of the pimento tree. These features gradually blend into the alpine scene aloft, covered with forests of cedar.

"The interior of the island has quite a different appearance from either side, presenting all the varieties of feature peculiar to a highland district; in some parts rugged, difficult of access, and densely wooded; in others spreading out into a wide expanse of table land or elevated plain, from which rise a number of small hummocks, giving a slight undulation to the surface. The ground in such spots is generally clear and open, covered with rich grass, and of a pastoral character. These regions, in which cultivation has made but little progress, are principally used for the rearing of cattle.

As these portions of the island present varieties in physical aspect, so they exhibit a corresponding diversity in climate. On the plains or sea-coast of the south side, the thermometer at noon does not vary more than 8° or 9° throughout the year, its greatest height being about 92°, and lowest 81°. The mid-day heat on both sides of the island is greatly modified by the influence of the sea-

breeze, which generally sets in from the eastward about eight or ten o'clock in the morning, increases in force till about two, and declines with the sun, till, on the approach of evening, it is succeeded by the land wind from the mountains. When these winds become less regular or altogether fail, as is sometimes the case before the rainy season, the atmosphere is exceedingly oppressive to the feelings, though the thermometer perhaps exhibits but little change in the temperature.

The quantity of rain which falls throughout the year is about 50 inches, and the seasons may be distinguished as follows. From the middle of December to the middle of April there is generally clear dry weather, except a few showers at Christmas. During the first three months of this period, north winds prevail, with considerable diminution of temperature, the thermometer sometimes sinking so low as 70° in the morning, but by mid-day it generally stands at from 83° to 85°; the sea-breezes at this time are weak and irregular. About the middle of April the sea-breeze fails altogether, the thermometer rises to about 86° at mid-day, and is seldom below 80° at night; the heat becomes oppressive, the atmosphere cloudy, and a few transient showers begin to usher in the Spring rains, which continue with great violence during the most part of May, and are generally preceded by heavy storms of thunder and lightning. The weather in June is generally hot and dry, the sky is seldom obscured by a cloud, the thermometer often rises to 92° at noon, the land-wind fails, and the nights are consequently oppressive, but the sea-breeze is strong, and tends greatly to moderate the intensity of the heat. Very little change is perceptible throughout July or August, but in September there is the same close sultry weather as in April, which continues till the Autumnal rains set in, about the middle of October. These are generally preceded by thunder and lightning, though not to so great an extent as in Spring, and continue from four to six weeks, during which period the temperature undergoes a reduction of about three or four degrees by day, and six or seven by night.

From July to October are the hurricane months in this island, but fortunately these phenomena are of rare occurrence.

The seasons on the north side of the island are somewhat different, the rains being generally a month later in their commencement, and much longer in their duration than on the south side; a greater quantity also falls, and the showers are more equally distributed throughout the year. Owing to the vicinity of the mountains, and there being little extent of level ground, the atmosphere is cooler in Winter, and more liable to sudden alternations of temperature.

The high lands in the interior of the island possess a very different climate from that of either side, their great elevation producing a corresponding diminution of temperature, which would be still more perceptible, were it not that the sea-breeze, which modifies the heat of mid-day in the low country, does not extend to the mountains, and is even but partially felt at the distance of a few miles from the coast. It is, consequently in the morning and evening that the diminution of temperature is most felt in the high grounds; at which periods it sometimes exceeds 25°." 43.

In this island almost every variety of climate may be obtained. At a height of 4000 feet, the thermometer stands at 55° to 65°—in Winter it falls to 44°. There tropical vegetation ceases, and is supplanted by that of temperate regions. Showers are common in the interior of the island throughout the greater part of the year. The air is very humid, and dense fogs are frequent. While the yellow fever is desolating the plains on the coast, these mountains enjoy a complete immunity from the pestilence. It has never been known to extend above an elevation of 2500 feet—a proof, if proof were wanting that it is not propagated by contagion. The inhabi-

tants of these regions enjoy health and long life, and present ruddy complexions like those extra-tropical countries. The ratio of mortality, for 20 years, has been as follows:—121 annual deaths out of every 1000 of strength. But the real mortality, owing to some omissions in the returns, &c. was 143 *per mille*.—A tremendous wear and tear of human life! In the most healthy periods of the last twenty years, the mortality has been four or five times as much as among troops at home—in the sickly seasons sixteen times as much! It was found that the average mortality in Jamaica, for the thirteen years preceding 1817, was nearly as possible the same as since: so that the climate has experienced no amelioration—nor have the means of preventing or curing diseases increased in efficiency.

In the twenty years past, fevers occasioned 101 deaths *per mille per annum* —lung diseases, 7 ditto ditto—liver, 1 ditto ditto—stomach and bowels 5 ditto ditto—so that pulmonic diseases stood first after fevers in mortality. Jamaica is much more infested with the fatal bilious remittent fever than the Windward and Leeward Islands.

"Several instances will be adduced in the course of this Report to show that these epidemics spared neither age, sex, nor condition of life; the temperate and the intemperate, the prudent and the thoughtless, fell victims to them in nearly an equal degree; and all sanatary precautions, save the immediate removal of the troops from the locality where they originated, seem to have had little or no effect in arresting their progress. Their appearance cannot be said to have been confined to any particular season of the year, for the results on this head are by no means uniform, though the preponderance of mortality has been greater during the last two than the first two quarters, as will appear from the total deaths stated in each Quarterly Report, during the years when they were most prevalent and fatal in the island." 46.

In this place the reporters observe that, "unlike the yellow fever of Gibraltar, one attack of the remittent fever of this country secures no immunity from a second." Here the reporters have deviated from the sober path of facts, to the seductive walk of theory. What business have they with the "yellow fever of Gibraltar?" Even if they had been agents in the Gibraltar fever under the Frasers, the Pyms, and contagionists in general, they had no right to lug it in here, without any thing on the record to bear them out.* Such a procedure in a Court of Law or Justice would be instantly quashed. But it discloses to us a bias, a *prejudice*, which casts a suspicion on every conclusion to which the reporters come on the data before them. They have thus, to use a vulgar expression, "let the cat out of the bag," a great deal too soon for themselves, and very fortunately for their readers.

But to return to facts. Of the pulmonary affections admitted into hospital, in Jamaica, the following was the ratio of mortality.

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* The proofs or rather the assertions that one attack of the Gibraltar fever will secure from subsequent attacks are almost entirely *ex parte*.

"DISEASES OF THE LUNGS.

Under this head are comprised in the preceding Table—

	Admitted.	Died.	Proportion of Deaths to Admissions.
Inflammation of the Lungs	697	15	1 in 46
Pleurisy	29	0	0 in 29
Spitting of Blood	108	12	1 in 9
Consumption	661	315	1 in 2
Acute Catarrh	2,438	18	1 in 135
Chronic Catarrh	371	23	1 in 16
Asthma	41	3	1 in 14
Difficulty of Breathing[1].....	12	2	1 in 6
Total....	4,357	388	1 in 11
Annual ratio per 1000 of Mean Strength	85	7.5	.....

This class of diseases has been about one-third less prevalent, and one-third less fatal, than on the Windward and Leeward Commands. But when the deaths on the voyage home, and after landing in England, are taken into account, it appears that the wear and pulmonary affections in the West Indies, is, as nearly as possible, the same as in an equal number of troops in Great Britain.

"As an instance how much more prevalent consumption is in that country than in Britain, we may state that of an agregate strength of 51,567, serving in Jamaica, there have been 661 treated for that disease, being at the rate of 13 per thousand annually; while out of an aggregate strength of 44,611 dragoon guards and dragoons, serving in the United Kingdom, there have been treated only 286, or between 5 and 6 per thousand annually, and that too, though the period over which the latter observations extend, includes two severe epidemics of influenza, which, no doubt, laid the foundation of more cases of this disease than usually occur in this country."

"The baneful influence of the climate of the West Indies in accelerating the progress of consumption has been often remarked by the medical authorities; but it does not seem to have occurred to them, nor indeed had they any means of ascertaining, that at least twice as many cases of it originate in that climate as at home, though those catarrhal affections to which they are generally attributed are there comparatively so rare." 47.

This, we think, may open the eyes of those who consider a hot climate a panacea for pulmonary complaints.

DISEASES OF THE STOMACH AND BOWELS.

The following table shews the proportions which the various kinds of gastro-intestinal affections bear to one another.

	Admitted.	Died.	Proportion of Deaths to Admissions.
Abdominal Inflammation	2	1	1 in 2
Inflammation of the Stomach	42	4	1 in 10
Ditto of the Bowels	52	11	1 in 5
Vomiting of Blood	9	4	1 in 2
Acute Dysentery	4,473	114	1 in 40
Chronic Dysentery	436	70	1 in 6
Indigestion	579	5	1 in 116
Cholic	1,107	4	1 in 277
Obstipation	196	2	1 in 98
Cholera Morbus	216	3	1 in 72
Diarrhœa	5,169	42	1 in 123
Cancer of the Stomach	1	. . .	0 in 1
Total	12,282	260	1 in 47
Annual ratio per 1000 of mean Strength	238	5.1	

Under the head of diseases of the brain, we were surprized to see so large a number as 258 cases of epilepsy out of 720 admissions. The mortality, too, was 1 in 14! Rum, however, is the cause of all! Venereal diseases are very rare in Jamaica.

We must pass over descriptions and tables of various localities in Jamaica, with the exception of a curious place—MARVON-TOWN, situated among the mountains, and elevated 2000 feet above the level of the sea. It is about 18 miles from Montego Bay, and commands a magnificent prospect by sea and land. Being surrounded by high mountains, the climate is very variable and the atmospheric vicissitudes considerable. Much rain falls, and the evaporation by a tropical sun is great, producing dense fogs. The thermometer seldom rises above 80°, and is often, at night or towards morning, so low as 52°. The actual mortality at this station is not above $1\frac{1}{2}$ per cent. per annum, which is, as nearly as possible, the mortality among the Foot-guards in London. There are several other mountain-stations, as Greencastle, Phœnix Park, Montpellier, Mandeville, &c., where salubrity is the order of the day, and yellow fever never shews its face.

We must pass over the Bahama Islands, a crescent of 600 miles, and containing several hundred isles, chiefly Caroline, and the great majority uninhabited. New Providence is the principal station for troops, and very inimical it is to human life.

Honduras is nearly on a par, in respect to mortality, with the Windward and Leeward Islands.

There is a curious section on the influence of age and length of residence on the mortality of troops serving in the West Indies, from which it appears

that, instead of the mortality decreasing with the advance of age, as has been generally supposed, it increases, with infinitely greater rapidity, than in Great Britain. And this has been found to obtain in every station, whether temperate or tropical. Thus the doctrine of seasoning or acclimatization falls to the ground before statistical facts.

In another section a great number of tables and data are brought forward to prove that the mortality among officers, as compared with the men, is about one half. The officers suffer less by fever and rather more by hepatic affections than the private soldier.

The sixth and last section contains deductions from the preceding reports and data.

The reporters observe, that although the minute trains of investigation into which they have gone have not enabled them to "distinguish with certainty the essential causes of sickness and mortality among European troops and civil residents in the West Indies, yet the numerical results at which they have arrived seem sufficient to warrant the belief that many of the opinions hitherto entertained, in regard to the nature and influence of these causes, must have been adopted on very inadequate evidence." Thus the high temperature of the West Indies, they say, cannot be the cause of fevers, since the mean temperatures throughout the whole of the islands is nearly the same, while fevers are ten times more prevalent in some islands than in others. But who, we ask, ascribed fevers to mere temperature? In the East Indies the temperature is much higher than in the West, yet fevers are much less prevalent. But solar heat, though it may not *per se*, occasion fevers, it may be, and we believe is very instrumental in the production of these and other diseases, not only by increasing the susceptibility of the human frame, but in calling forth those exhalations or miasmata, which occasion such havoc among Europeans in hot countries. It is now nearly thirty years since Dr. Johnson pointed out that it was to *atmospherical vicissitudes, and terrestrial emanations* most of our tropical diseases were attributable—not merely to high temperature *alone*, excepting in as far as it predisposed the body to be noxiously impressed by cold and miasmata.

The reporters go on to "excessive moisture," as a supposed cause of fevers, &c. They observe that, if this were the essential cause of fevers, we ought to have most of these diseases where most rain falls, which is not the case. Certainly not. If mere moisture caused fevers, those who lived on the ocean would never be free from them. But moisture has an injurious effect on the human frame when conjoined with vicissitudes of temperature —but, above all, the evaporation of moisture, in certain malarious localities, carries up those deadly miasmata from the earth which are so destructive of life. The reporters, indeed, acknowledge the insalubrity of heat and moisture *conjoined*.

"Though heat and moisture are not the primary causes of fever, however, it is highly probable their operation tends in some measure to increase its intensity. The Tables, illustrating the influence of the seasons on the health of the troops in each station, show that the greatest number of admissions into hospital and deaths has, on the average of a series of years (though not uniformly or equally in each year), taken place in those months when the greatest degree of heat was combined with the greatest moisture; and it may be ob-

served as a striking exemplification of this fact, that as the sun proceeds northward in the ecliptic, carrying heat and moisture in his train, the period generally termed the unhealthy season, is later in the northern colonies than in those to the south." 102.

The reporters very properly disclaim the idea of miasmata being wafted by the winds from the vast forest and savanhas of South America by the S. W. winds. The reporters attempt to upset the hypothesis, as they term it, of the extrication of malaria from the soil, by very unsatisfactory arguments. Thus, because the physical characters of two localities are apparently the same, and yet they are not equally healthy, miasmata can have nothing to do with the production of fevers!!! With such reasoning it is useless to reason.

So again, that marshes, swamps, and lagoons cannot harbour or emit febrile miasmata, is, they think, proved by the fact that, in very marshy places, as Guiana, Honduras, &c. fevers are not so frequent as in some places in Jamaica, where marshes are little observed. The medical world are well aware that malaria may issue from localities where no marshes exist, as in Rome, for example; but the almost universal fact that swamps and marshes are unhealthy in hot countries, is a sufficient proof (however numerous the exceptions of the other) of the connexions of febrific miasmata with fevers and morasses. We know little or nothing of the nature of miasmata that issue from the Pontine marshes, or the vicinity of Rome, no more than of those which emanate from certain localities in the West Indies and other countries; but there are hardly any facts in medical history so well established as the emanations of malaria from the soil of those countries. It is vain to say that the marshes always exist, whereas the fevers are much more violent one year than another; and that in some years they hardly occur at all. We may deny the existence of variolous contagion in the air, because in some years it is ten time more destructive than in others. The reporters would seem to have a great inclination to doubt the security which elevation is supposed to confer on people in hot climates, but the facts which they have already stated, render scepticism on that point impossible.

"The instancesof Fort St. George at Tobago, Morne Fortuné at St. Lucia, and Morne Bruce at Dominica, demonstrate that mere elevation to the height of 600 or 700 feet, instead of securing a healthy position, seems rather to have the reverse tendency." 103.

The topographical researches of medical men, in all quarters of the globe, have long proved that miasmata will rise to a certain elevation, and be carried by currents of air to a certain distance; but the exemption from malaria at a height of some thousands of feet, shews that there is a limit to the range. At a considerable elevation (3000 feet or so) grounds capable of emitting malaria may exist, but the low temperature of the mountainous heights checks the extrication effectually.

The reporters, after having, as they supposed, demolished the theories of preceding writers, seem a little inclined to start an hypothesis of their own; but they are too diffident on this point, and merely throw out a hint for others to improve upon.

"We are too sensible of the difficulty of the subject to venture on any theory of our own, which might on subsequent examination prove as futile as those

which preceded it; but we merely wish to call the attention of such persons as may be disposed for further inquiry, to the circumstance that as yet no experiments have been made on the electrical condition of the atmosphere in the West Indies, during periods of epidemic; and as it is possible either an excess or deficiency of that powerful though unseen agent, may exercise an important influence on the vital functions, the subject seems worthy of attention. Heat and moisture are well known to be intimately connected with the developement of electrical phenomena, and its influence on vegetation has also recently been established by experiment; consequently, if the prevalence of disease could be satisfactorily traced to that source, the reason why heat, moisture, and vegetation should have been mistaken as the causes, when acting only as auxiliaries, would be readily accounted for; and even should the results leave the cause of disease as undetermined as before, science will at least be benefitted by the inquiry." 103

Passing over the electrical hypothesis (which is not new) we beg to say that while we differ widely from the reporters in respect to their conclusions —"in which nothing is concluded"—we tender them our unfeigned thanks for the valuable mass of facts which they have accumulated in this volume. These facts will stand when the deductions drawn from them are forgotten—and will furnish data for future speculators, when the present race is no more. We hope the editors will be spared their health for the arduous labours in which they are engaged, and we shall hail with pleasure the advent of another report from the same hands.

P.S. Could they not give us some pathological and therapeutical details, as well as statistical?

A Treatise on Neuralgia. By *Richard Rowland*, M.D. Physician to the City Dispenary. 8vo. pp. 174. Highley, Sept. 1838.

Neuralgia is a rapidly increasing malady; and consequently we may expect successive publications on the subject. The torture occasioned by the disease—its certain and treacherous attacks—the almost impenetrable obscurity in which it is shrouded—and lastly the difficulty of cure, must always render neuralgia an interesting subject of inquiry, both amongst physicians and the sufferers themselves. There is no doubt, too, but that young practitioners every day confound neuralgia with phlogosis, by which much mischief is occasioned There is no internal organ or structure of the body exempt from attacks of neuralgia, and it may be very easily believed that when such parts as the heart, the pleura, the peritoneum, &c. are invaded, the inexperienced, and still more the incautious and routine practitioner, may be readily thrown off his guard, and unsheath his lancet against the formidable enemy in the shape of carditis, pleuritis, peritonitis, &c. Even when neuralgia exhibits the chief characteristics of inflammation, rubor, tumor, dolor, calor, as is sometimes seen, the inflammation is of a peculiar kind that ill bears depletion of the vascular system. Who has not seen, in "brow ague," as it is called, the conjunctiva, the palpebræ, and, in short, all the visible structures of the eye and its connexions, become

scarlet, hot, swelled, and painful, thus fulfilling the four essential requisites of phlogosis—yet all these phenomena will disperse in a few hours, without leeches lotions, or purgatives.

Phlogosis is not nearly so often mistaken for neuralgia as the latter for the former. It is so far fortunate; for to treat inflammation as a neurosis would be fatal.

Dr. Rowland's work is a regular systematic treatise, compiled from all accessible authorities, and containing scarcely anything original, except a few cases at the end. It would therefore make a capital article (somewhat condensed) for an enlarged cyclopædia of medicine. We shall not attempt an analysis. We might as well try to analyze a pocket dictionary. Dr. R.'s book is a very useful one, as collecting into a focus the rays of light—or at least of supposed light—scattered through multitudinous journals, memoirs, and monographs. It might not be either useless or uninteresting to present our readers with a kind of synopsis of the various *causes* that have been assigned for neuralgia—the conjectures as to its seat and nature—and the remedies that have been proposed for its cure or mitigation.

1. EXCITING CAUSES.

1. Exposure to *wet and cold* is one of the most common exciting causes. 2. *Cutaneous irritation*, as contusions, eruptions, cicatrices, &c. Herpes zoster is accompanied by so much pain as to resemble neuralgia. 3. *Tension* of nerves. The stretching of limbs, the suspension of heavy weights, violent twistings and contortions of the trunk or members have excited neuralgia. 4. *Pressure* on nerves, as from a foreign body, enlarged organ, dilated vessel, tumour, &c. The subcutaneous tubercle is attended by an almost neuralgic pain. 5. *Carious teeth.* This is a very common cause of facial neuralgia. 6. *Disorder of the alimentary canal* Great diversity of opinion prevails on this point—very many attributing neuralgia to chylopoietic derangement where no other cause is evident, while some distinguished practitioners deny the reality of this cause altogether. Among the latter, for example, are Montfalcon and Dr. Elliotson. Most of the observant and unprejudiced practitioners will be inclined to believe that irritation of the gastro-intestinal nerves is very frequently the cause of painful states of other nerves. The late Dr. Wollaston was stricken with neuralgia by eating an ice cream. He became sick, threw up the ice-cream, and the pain disappeared. Sir B. Brodie relates that and some other similar cases. 7. Diseases of the *urinary organs.* Sir B. Brodie and others have related cases where severe neuralgia was produced by this class of causes. 8. Disorders of the *heart and large vessels.* We have some doubts of this source of neuralgia, except where enlargements act mechanically on the adjacent nerves. 9. *Uterine disorders.* This source has been well attested by numerous and competent witnesses. This may account for the greater frequency of neuralgia in women than in men—and also for the circumstance that it occurs not unfrequently about the approach of the catamenia. "That peculiar form of neuralgia which simulates viceral inflammation, very commonly originates in uterine disorder." 10. *Spinal irritation* This source of the complaint in question, was pointed out so long ago as 1785, by

Pouteau, and more recently by Bradley, Brown (Glasgow), Darwall (Birmingham), Teale (Leeds), and others. In these cases, pain is seldom complained of in the back itself, except when examined by pressure or hot sponge. Then the patient shrinks when a particular spot is touched. There is a very general relation between the seat of the neuralgic pain and the portion of spinal column where the tenderness is felt, readily enough traced by the anatomist. It is to be remembered, however, that spinal irritation may itself be caused by disorder in other parts, as in the line of the digestive organs, and then the two affections act and re-act on each other. 11. *Organic disease of the brain and spinal marrow.* This is not confined solely to the cerebral nerves, but extends to nerves of spinal origin—or even of the ganglionic class, as those of the stomach, liver, or other internal organs, whilst the cerebral symptoms are absent or very slight. Thus Andral relates a case where ramollissement was going on in the brain, but the only symptom was pain in the lower extremities. A patient in Bartholomew's Hospital had such violent pain in the knee that the limb was amputated, but nothing found to account for the pain. Some years afterwards the patient died, and then plates of cartilaginous and bony deposits were found in the posterior surface of the spinal cord. 12. *Malignant Diseases.* The dreadful lancinating pains attending malignant diseases seem to be neuralgic. 13. *Chronic inflammation.* The pains in these cases, are generally periodical, and very different from those of ordinary chronic phlogosis. 14. *Malaria.* Van Swieten observed the striking analogy between ague and periodical neuralgia; but it was Maculloch, as our readers know, who traced, with a masterly hand, neuralgia to malaria. Scarcely a day passes that we do not observe neuralgia clearly traceable to this cause, especially among those who are mad enough to spend the Summer in Italy and other malarious countries.

II. SEAT OF NEURALGIA.

Hardly any one will doubt that the seat of this disease is in the nerves. It was long doubted, and even denied, that the ganglionic nerves could be the seat of pain, as vivisections had shown that they might be picked or cut without sensation. Most physiologists—especially those who are in active practice—now admit that the sensibility of the ganglionic nerves may be raised by disease to that degree possessed by the cerebro-spinal nerves. Brachet has set this matter in a clear point of view.

"He found that the sympathetic ganglia and the filaments which proceed from them, might be repeatedly pricked, without any sign of suffering being shewn by the animals, but when the irritation was continued until the ganglia became red and inflamed, that acute pain was then produced by every puncture; that when a ganglion had been thus irritated, and rendered sensible, its sensibility was again destroyed by the section of the nerve which connected it with the spinal marrow; but if the irritation were renewed after the lapse of a few minutes, the ganglion was found to have regained its sensibility, of which, however, it was finally and completely deprived by making a section of the nerves of communication passing between it and the ganglia situated immediately above and below it; that when a ganglion had been excited to sensibility, subsequently to the section of its spinal branch, it was permanently deprived of this property, by dividing the nervous twigs passing from the spine to the two ganglia, situated immediately above and below that, where the irritation was applied." 49.

III. PATHOLOGY.

We know very little on this part of the subject. Neuralgia has been defined a "preternatural elevation of function in one or more of the sentient nerves, without corresponding excitement of the vascular, or of the great mass of the nervous system." This is, perhaps, as good a definition as can be formed. Its connexion with rheumatism is very close; but we cannot maintain that the two are identical. Many of the continental pathologists consider neuralgia as, in fact, neuritis of a chronic kind; but this doctrine is untenable. Inflammation, however chronic, soon induces alteration of structure; but it is well known that neuralgia may exist for years without effecting any perceptible change of structure in the nerve. It is useless to pursue this part of the subject farther.

IV. TREATMENT.

There are few active remedies in the Pharmacopœia that have not been either proposed or tried for this terrible malady—a pretty clear proof of the intractable nature of the disease! Many remedies have acquired unmerited renown for a time, chiefly owing to the intermissions which naturally, and often capriciously occur in neuralgia—the post hoc ergo propter hoc argument being a very favourite one with most of our specific-mongers. Dr. R. justly observes that, "it is by a careful and patient investigation of the causes and habitudes of this dreadful malady, rather than by the introduction of a new remedy, that any improvement in the manner of treating it is to be hoped for." This observation applies indeed to every disease with which we have to contend. With the view of facilitating this investigation, Dr. R. divides neuralgia into four classes, according to the exciting causes.

"I.—Cases where the symptoms continue after the original cause has ceased to exist.

II.—Cases arising from functional disorders.

III.—Cases occasioned by causes of an remediable nature,

IV.—Cases where the cause cannot be ascertained.

I.—Under the first class, are included those cases of Neuralgia, which can be traced to causes that have already disappeared; as when the pains continue after the subsidence of a cutaneous eruption, the removal of a tumour, the extraction of a tooth, &c. These cases generally yield rapidly to remedies which act powerfully on the nervous system; to be presently enumerated.

II.—In the cases comprehended under this section, the first indication is to remove the cause upon which the disease obviously depends; until this preliminary treatment has been accomplished, the remedies, which in the first class of cases, often afford relief, will generally be of no avail; and may increase the severity of the symptoms. But when the original disorder has been removed, the pains frequently disappear without further treatment; or at least, may now be removed by those remedies which had previously failed to make any impression on them.

III.—In this class are placed those unfortunate cases, depending upon causes of an irremediable character; but even in these, the nervous pains may be aggravated or calmed, according to the state of the disease with which they are connected.

The same remark is applicable to Neuralgia accompanying malignant diseases;

the sufferings, even in these wretched cases, may be lightened, and sometimes rendered comparatively mild, by first subduing any inordinate cause of excitement of the diseased organ, and subsequently administering the more specific remedies for Neuralgia.

IV.—This section embraces those numerous cases, where the cause of the nervous pains cannot be discovered, and where the practice must therefore be in a great measure empirical." 70.

We shall not trouble our readers with a long list of remedies that have proved ineffectual or deceptious. Iron, arsenic, colchicum, iodine, calomel and opium, veratria, belladonna, purgation, counter-irritation—the insertion of morphia, strychnine, &c. under the skin; as in vaccination. Our author has tried this last method with some success. The section of nerves is now, we believe, almost entirely given up. Since Dr. Granville's book appeared we have applied the ammoniated counter-irritant with apparent benefit, to several facial neuralgiæ. It is a powerful application, but the heat and tingling soon subside, leaving the part more or less vesicated. Mr. Gardner, in Oxford-street will supply medical men with the antodyne, as directed by Dr. Granville; but the liquor ammoniæ fortis is just as good as the antodyne.

Our author, at page 73, goes from the topic of neuralgia generally to the specific forms, or rather seats of the disease, as the facial, cervical, cubito-digital, cutaneous, intercostal, ileo-scrotal, femora-popliteal, mammary, &c. which we pass over. He then takes up visceral neuralgia, in which he places angina pectoris. We coincide with him in opinion that change of structure in the heart itself is not essential to the symptoms of angina pectoris. Many dissections have shewn no organic affection; but, at the same time, we apprehend that, in a majority of cases, some structural lesion exists, although we may not be able to demonstrate it to the eye. We may even have found structural lesions, as of the valves, coronary arteries, or walls of the organ, which had little or no concern in the production of the phenomena during life. As was said before, the general opinion of the profession is now that angina pectoris is one of the most formidable of the neuralgiæ.

"If the principles which seem to determine the production of Neuralgic affections generally, be applied to the explanation of the symptoms of Angina Pectoris, they will lead to the following conclusions:—That many cases are to be ascribed to mechanical irritation of the cardiac nerves, by distention of the great vessels when exertion is made, or when the circulation is otherwise accelerated; whilst in others, the changes in the structure of the heart, are to be regarded as the means of determining the irritation excited by some other cause, to that organ, rather than as the origin of the disease." 129.

There is some obscurity in the latter part of the above passage. The treatment consists almost entirely in avoiding the lædentia—the exciting causes of the attacks. In the paroxysm, perfect quietude and stimulating anodynes must be employed.

Gastralgia is despatched by our author in a couple of pages, his chief object being to discriminate between gastralgia and gastritis—a discrimination not always easy, since the two states are not unfrequently combined in the same subject. The following passage contains the diagnosis of the two diseases.

"*Gastralgia.*—This affection is marked by paroxysms of pain, commonly

described as lancinating, tearing, or burning, situated in the region of the stomach, and frequently extending to the thoracic parietes and to the back. It presents every degree of intensity, being sometimes merely a sensation of slight uneasiness, or of constriction in the epigastrium, whilst at others, the sufferings are of the most acute description. The duration of the attacks is also extremely various. In general, they do not continue longer than a few minutes, but are occasionally prolonged to several hours: they often terminate with a copious secretion of gas, either alone, or mixed with a quantity of limpid fluid, which rises spontaneously to the mouth, being sometimes insipid, but at others, having an acrid taste. Notwithstanding the disturbance in the principal organ of digestion, that process is seldom materially disturbed: the tongue generally remains clean, and the appetite good, and in some cases, it is voracious;—the bowels are mostly constipated. The pain is often relieved by food;—there is usually no thirst or excitement of the pulse, or any other febrile symptom; and although the disease may have existed for many years, the patient often continues to bear the aspect of health.

The length of the intermission or remission, varies in different cases; two or more attacks, sometimes recur daily, at regular periods; in other cases, the intervals are much longer, and are irregular.

Gastralgia may be mistaken for chronic gastritis. By contrasting with the foregoing description, the following sketch of the latter affection, the diagnosis will be apparent, at least in common cases.

In Chronic Gastritis the pain is obtuse and confined to the epigastrium; it is increased by pressure, and aggravated by ingesta; it has no regular intermission; the tongue is commonly parched, and red at its tip and edges, with incrustation on its centre; the breath is fætid; the mouth foul, there is much thirst, and a continual desire for cold drinks. The appetite is bad, and the sight of food disgusting, and when swallowed, it is almost instantly rejected. If it remain in the stomach, digestion is imperfectly performed, and is attended with acid or fætid eructations, and febrile excitement.

The causes which act particularly in the excitement of gastralgia are, long abstinence, especially when the mind is anxious; an insufficient diet, with regard either to the quantity or quality of the aliment; uterine disturbance; irregular action of the heart, causing irritation of the pneumo-gastric nerves; pressure against the epigastrium, as required in the employment of certain artizans, such as shoemakers, weavers &c." 133.

Our author has found no medicine more efficacious in gastralgia or enteralgia than the extract of nux vomica. It is a rough remedy to make free with.

We must pass over hepatalgia, nephralgia, cystalgia, and testalgia—the last of which has been so admirably described by Sir Astley Cooper. Hysteralgia has been well described by Gooch, Addison, Sir B. Brodie, and others. We suspect, from several cases that have occurred to us, that fæcal accumulations in the colon and rectum have kept up, or rather caused "irritable uterus," which carbonate of iron and tonics increased, rather than relieved. One of the most instructive cases which we remember to have witnessed, occurred lately, and was attended by Dr. Locock, Sir B. Brodie, and ourselves.

The patient was a young lady about 22 years of age, of pale complexion, and disposed to hysteria. She had been ailing, with various anomalous complaints, for more than a year—the chief phenomena being considered referable to irritable uterus, for which carbonate of iron had been given in large quantities, with various other tonics, stimulants, and anti-nervous

medicines. Pains in the loins, hypogastrium, bladder, rectum, and uterus, were tormenting and rendered her life miserable. The bowels were habitually constipated. Dr. L. suspecting that accumulations existed in the bowels, examined the rectum, and found some hardened fæces there, which were removed by injections and aperients. Soon after this, however, all the symptoms became aggravated. The bearing-down pains exactly resembled labour pains, though the uterus was found to be perfectly healthy, and sickness and vomiting were added to the other phenomena. For days and nights she got no rest from the attacks, which came on every ten minutes or quarter of an hour, causing her to cry aloud. At this time we were requested to meet Dr. Locock, but as his engagements prevented him from meeting us, and as the friends of the young lady apprehended her death, we visited her, (by Dr. L.'s consent) alone. The uterus was found to be free from disease, but in the rectum we found, or thought we found, a large and very hard tumor, pressing on the uterus, and obstructing the rectum. We ordered enemata to be thrown up, and calomel to be given internally. Next day Sir B. Brodie examined the patient, and found the supposed tumor to be a mass of hardened fæces; and, in the course of that evening, a pound and a half of hard fæces, *chiefly composed of carbonate of iron*, were dug out of the rectum! It is hardly necessary to say that the young lady was instantly relieved from the most sleepless and excruciating agonies, and has since returned to the country in a state of improving health. The case is, we think, instructive, and may serve as a lesson to practitioners who are in the habit of prescribing large doses of carbonate of iron. Purgative medicines should always be given at short and regular intervals while the course of iron continues. Another caution regards the examination of the rectum, when the abovementioned symptoms present themselves. But, unfortunately, much mischief may be produced by the carbonate dropping into, and lurking in, the cells of the colon, where it is out of our reach.

The work concludes with a selection of twenty cases, in illustration of the disease in its various shapes and seats. The volume presents a fair epitome of our present knowledge of neuralgic affections.

An Experimental Essay on the Physiology of the Blood. By *Charles Maitland*, M.D.

To this Essay was awarded the Gold Medal, by the Medical Faculty of Edinburgh—and it was well adjudged. The Essay is small (90) pages, but it contains a prodigious mass of facts and observations concentrated from all quarters, at home and abroad. Such a work is, of course, insusceptible of analysis—every page of it being a most concentrated analysis of memoirs that have preceded it. Nevertheless we do not like to pass it over, even with the warmest encomium, and without glancing at some of its multifarious contents.

In this Essay the author embraces only the physiology of the blood—its pathology being reserved for mature observation and experiments It is thrown

into five chapters, with a short introduction, containing the rise, progress, and downfall of the humoral pathology—on solidism—and on the present state of the question. Like most men of sense and experience, Dr. M. inclines to the opinion that solidism went as far in one extreme of error, as the humoral doctrine did in the other—much farther indeed. The blood is a *structure* circulating through all other structures—representing their wants, and diffusing the vital principle which it receives in the lungs, to every atom in the composition of the body. The following seems to us to be original and ingenious.

"The structures in the interior of our frame must have access to oxygen, and as they cannot be brought into contact with the atmosphere, some means must be devised for conveying oxygen to them. It is clear that the blood does not need the vast amount of that gas absorbed by it, for it is as constantly deprived of it in the extreme capillaries, and as the circulation is much slower in the veins than in the arteries, the blood must exist in the dark form during the greater part of our lives. We are, therefore, at no loss to ascertain by what means this element is furnished to the solids, and how they must suffer if this function be materially deranged. In this view, respiration is a general function of the system, deputed to the blood as by proxy, and performed in the pulmonary tissue; and the globules of the blood may be considered as representatives of the solids, by which these latter maintain their connexion with the seat of such important agencies." 5.

The blood, in the larger vessels, seems to have little association with the contiguous parts; but in the capillaries it is very different. When viewed with the microscope in this situation, Professor Schultz has compared it to a whirlpool, from which particles are constantly detached to be lost in the solids, whilst others are as perpetually flying off from the latter, to be merged in the crimson torrent. M. Andral remarks that, "at their point of contact, the blood assumes the nature of the solid, and becomes organized; so that its vitality can be no longer doubted." We think there can be no doubt of its vitality, in whatever situation it is to be seen.

"From this we are prepared to find that the morbid states of either division of our system may be mutually productive of each other; so much so, as often to prevent us from deciding in which of the two they take their origin. Since, therefore, the blood intervenes between the processes of digestion and nutrition, as well as between those of absorption and secretion, we might suppose from direct reasoning, that the proximate causes of disease in the nutritive and secrenent systems might be shared between the organs concerned in those operations, and the fluid upon which they act. The progress of organic chemistry is daily accumulating proofs of the truth of this view of the matter." 6.

CHAP. I. *Mechanical Constitution of the Blood.* The temperature ranges from 100 to 101—specific gravity 1.05 to 7—viewed by the microscope it presents numerous red globules floating in a nearly colourless fluid. In man, and mammalia, the globules are flattened circular discs—in the lower ranges they are elliptical—and in the lowest, they return to the circular form again. The blood of birds shews the highest temperature—next is that of the omnivora, including man—then the herbivora—and last, the cold-blooded animals. In the same order stands the ratio of the richness of the blood in red globules. But the fluid constituent of blood—the liquor sanguinis—forms, perhaps, the most important element of our frame. It is

essentially concerned in most of the animal functions, excepting respiration. In cholera it is filtered into the intestines—it is infused on the serous membranes, and forms adhesions—upon the mucous surfaces forming false membranes—into wounds in the shape of coagulable lymph—furnishing the materials for nutrition and secretion, &c. &c. "This fluid has been procured by artificial means, namely, by filtering the blood of a frog a little diluted with water. We used white filtering-paper first moistened. In the liquid thus obtained, no globules can be discovered by the microscope. In a few minutes a coagulum forms, gradually contracts, becomes whitish and fibrous, and has exactly the appearance of lymph." This plays an important part in the changes which the blood undergoes when drawn from a vein.

"The effect of alcohol on fresh blood is somewhat remarkable. I do not find it noticed in any work on the subject. On mixing bullock's blood with half its weight of cold strong alcohol, it remained fluid for some hours; and was at that time immediately coagulated by adding an equal bulk of additional spirit to the mixture. Numerous brown flocks were separated leaving a colourless fluid supernatant. On repeating the experiment with human blood, the same result was obtained. The following will be probably found a true explanation: the first portion of alcohol was sufficient to destroy the contractile power of the fibrin, but the water of the blood rendered it so dilute as not to precipitate the albumen; this, however, was effected by the farther addition of alcohol." 13.

Chap. II. *Chemical Constitution of the Blood.* Many attempts have been made, with very moderate success, to analyze this complicated fluid. Of late, however the experimenters have been tolerably unanimous—and perhaps have come tolerably near the truth. Lecanu has lately published an elaborate analysis, which may be taken as the standard of the present chemistry of the blood. In two specimens of healthy blood, the following constituents were found.

"Water	780·145	785·590
Fibrin	2·100	3·565
Hematosine	133·000	119·626
Albumen	65·090	69·115
Crystalline fat	2·430	4·300
Oily matter	1·310	2.270
Extractive	1·790	1·920
Albumen combined with soda	1·265	2·010
Alkaline salts	8.370	7.304
Earthy salts, iron	2·100	1·414
Loss	2·400	2·586
	1000·000	1000.000." 21.

The third chapter discusses the effects of respiration on the blood—that often investigated stumbling-block of chemists and physiologists! The following are the chief facts—perhaps the only ones—that are allowed on all hands:

"1. Of the air received into the lungs, part of the oxygen is retained, and a nearly equal volume of carbonic acid returned in its place, together with a variable amount of aqueous vapour.

2. The portion of blood transmitted through the pulmonary arteries and veins, has lost the dark modena hue, and acquired a red tint called arterial; together

with which it receives a power of supporting life, which it did not possess before.

3. A portion of nitrogen is absorbed, and another portion evolved, generally nearly equal, but not always so.

4. On removing a portion of venous blood from the body, and agitating it with atmospheric air, oxygen is absorbed, carbonic acid evolved, and the red colour of arterial blood produced.

We must pass over the chapter on the vitality of the blood, as leading to no useful or practical purpose. It is, as we said before, just as much entitled to the term vitality as the bones or muscles.

The last chapter is rather a diffused one—"on the organic relations of the blood"—but presents a good epitome of all that is known respecting the constituents of the blood. We shall conclude with one extract from this chapter.

"*Hematosine.* Our knowledge of this substance is as yet very incomplete. Our first and last acquaintance with it is in its perfect state, for we saw before that the red tint of the chyle is merely owing to a hematosine absorbed by lymphatics. And as we do not know of any further purposes which it serves beyond the circulation, so we have reason to believe that it is intended to be somewhat of a fixture in the system, its loss being supplied with difficulty. With the view of ascertaining the comparative facility with which these principles were renewed, the following case was selected. A middle-aged woman, affected with chronic bronchitis, was bled repeatedly at short intervals, with a view of relieving general oppression. On one of these occasions I obtained the blood, which was thus constituted:

Water	829·9
Fibrin and nuclein	6·3
Hematosine	45·6
Albumen and salts	118·2
	1000·0

From this and other observations, I conclude that hematosine is the most difficult to be replaced of all the elements of the blood. To apply this practically:

A severe attack of sea-sickness, though it may reduce a man to a shadow, seldom produces lasting inconvenience; in almost all cases a good appetite and active stomach restore the bulk and vigour of the system in a surprisingly short space of time. In cholera, the introduction of saline solutions into the veins suddenly restores for a time the animation and even spirits of the patient. But in cases of severe inflammation, as of the lungs, when 140 ounces of blood have been occasionally drawn, we know how long such patients require to recover strength, especially their colour and animal temperature. Yet all this is accomplished readily by the transfusion of blood from another individual, and as before shewn, the fibrin is not concerned in this vivifying influence. In sea-sickness and cholera, the red globules are not diminished in quantity, and the other parts of the blood are readily replaced. Hence we learn to substitute other means of depletion for venesection in cases where we apprehend difficulty in the restoration of strength during convalescence." 38.

It was before remarked by Dr. Maitland that menstruation occasions a considerable loss of hematosine—and that it is not unreasonable to suppose that a deficiency of this is a predisposing cause of amenorrhœa. He asks whether the benefit derived from iron in such cases is a mere coincidence? Mr. Jennings found a deficiency of hematosine in cases of amenorrhœa, and

our author did the same. The analysis of blood, in such an instance, was as follows:—

Water	781.0*
Fibrin	5.7
Hematosine	81.8
Albumen and salts	131.5
	1000.0

If the reader will turn to the analysis of healthy blood, a page or two back, he will be surprised at the difference between that and the amenorrhœal blood.

We take leave of Dr. M., hoping that he will prosecute his inquiries into the pathology of the blood with as much zeal and success as he has shewn in its physiology.

TRANSACTIONS OF THE MEDICAL AND PHYSICAL SOCIETY OF BOMBAY. Vol. 1. 1838. Richardson, Cornhill.

BOMBAY has followed the example—longo intervallo—of its elder sister, Calcutta, in the publication of Transactions. What is Madras about? Are our professional brethren of the second Presidency of India torpid behind their tatties, and unable to rouse themselves to energy, like those of the eastern and western capitals? The volume which lies before us is respectable, and augurs well for its successors. Although it falls short of 400 pages, its contents are various and miscellaneous. The first article occupies 79 pages, and delineates the medical topography of Guzerat. It is from the pen of Mr. Gibson, and does him credit. Though valuable and interesting to the Bombay Establishment, it would not be sufficiently so to our readers in this far western longitude and gloomy climate. We must therefore pass it and many other papers over, in order to select such as are generally interesting to the profession at home.

The third paper makes us acquainted with another new disease of Indian growth, which bids fair to eclipse the famous cholera of 1817. It scourged various parts of our Asiatic possessions between the years 1815 and 1820, and appears to bear no small affinity to the plague of the Levant. On its first visitation it was generally ushered in by febrile symptoms, with slight cough, pain in the chest, and hæmorrhage. The same was observed in the famous plague of Athens. The author of the first paper on the subject gives us no detailed description of the disease except saying that, besides buboes—"all the other symptoms which have been enumerated as frequent in plagues, were found in the different cases of this disease." It prevailed in Kallywar, Rutch, and part of Guzeret, causing great mortality.

Passing over 240 pages of the volume, we come to a paper by Mr. Hunter, entitled—

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* This case offers a remarkable instance of deviation from the general amount of constituents—the only deficiency is that of iron—the sum of albumen and hematosine being regular.

"CASES OF CARDIAC DISEASE AND OF TUBERCULAR PHTHISIS, OCCURRING IN THE 2D OR QUEEN'S ROYAL REGIMENT.

Ever since Mr. H. joined the Regiment in 1831, at Colaba, he has been struck with the frequency of cardiac and aortic diseases. He first thought it was, in some way, connected with purpura, which is very common at that station, but found afterwards that it prevailed at Poona, where purpura did not appear. It was frequently traced to attacks of rheumatism.

"But whether, or not, rheumatism be the first link in the morbid chain, a more efficient cause for hastening its progress, I am convinced, is the active duty a soldier undergoes whilst buttoned up in his accoutrements. These, by compressing the neck and chest, obstruct the circulation to such a degree, as to excite the heart to inordinate action, and consequently hypertrophy in the strong and muscular, or to dilatation in the weak and sickly; and in either case, particularly if there is any original disproportion of the organ, according to Laennec, a very frequent occurrence.

Again, in the former, the natural resiliency of the aorta being overcome by the inordinate force of the circulation, that vessel yields, dilates, and finally gives way, giving rise to aneurism.

It seems extraordinary, that, now the effects of tight-lacing on females are so well known, a soldier, intended for the most active and long continued exertion, should be placed in a similar predicament, when that very exertion is required. Is it possible he could be placed under more unfavourable circumstances?

It is said it makes him look smart, so says the school-mistress; and no doubt it does to those who have been accustomed to associate perfection with such dresses and forms, but does it to the student of nature? Quite the reverse; to him it can be productive only of pain. It is true the form having in a great measure, acquired its natural set, before the recruit enlists, his chest is not so squeezed into a triangle, nor his waist unto that of a 'spaniora;' nevertheless, taking his active duty into account, the compression can scarcely be less detrimental, and more especially in that climate; from the perspiration it at the same time creates." 240.

The author after this exposé of Indian dandyism, relates some cases of the disease in question, some few particulars of which we shall state.

Case 1. A young man, ten years in India, had had rheumatic fever in England severely, but did not complain in India till two months before the date of report, when he began to experience dyspnœa on exertion or when swaddled in his accoutrements. This increased greatly, became complicated with cough, expectoration, but no fever. Pulse 80, firm and strong—pain in the left side of the chest. Was bled, with some relief. The physical signs are minutely detailed, but need not be stated here. The bruit de scie and bruit de soufflet, with violent impulse, and throbbing of the carotids, &c. indicated clearly enough the condition of the heart. In about a month there was aggravation of cough, with bloody expectoration, and utter inability to lie down. He soon afterwards died.

On dissection there was found serous infiltration into the cavities and cellular membrane—liver indurated and granular. Lungs in the different stages of inflammation, with purulent infiltration—heart enormously enlarged, with six or eight ounces of water in the pericardium. The parietes were thickened and there was disease both of the mitral and aortic valves.

By the way, our author diagnosed that there was no valvular disease—a

prophecy which we should be very sorry to make, where there were the two bruits before alluded to. Mr. Hunter will be a little more cautious in future. For although we do not say that the bruits are *certain* signs of valvular disease, we apprehend that they are *generally* so. Two other and not very dissimilar cases are related; but present nothing of much interest. The same may be said of the cases of tubercular phthsis, which would seem to be detailed chiefly with the view of showing that Mr. Hunter is an expert auscultator. Of his talent in this way we have no doubt, and right glad are we to see the "inutile lignum," as the stethoscope was first called, so usefully employed in our Indian possessions.

With the two following very curious cases, taken from the Appendix, we must conclude our notice of this volume.

INTESTINAL SLOUGHING.

Case 1. By Dr. Brown.—"This case occurred in Farrier C. McDonough, 3d Troop Horse Artillery, who was discharged from hospital, cured of fever, on the 17th November, 1834. He returned to his duty, but was re-admitted into hospital on the 30th November: stated that for a day or two previously he had experienced frequent feverish feelings, a dull pain, with sense of twisting in the region of the abdomen. and attended by constipation.

On admission he had almost constant calls to stool. The evacuations were scanty, very offensive, and passed with much straining. The abdomen was slightly tumid; there was general tenderness, on pressure more felt however, on the left side: his countenance was extremely anxious and pallid: tongue slightly furred at the root, and centre, with raw and reddish-edges: frequent irritability of stomach: pulse soft, and rather quick: surface nearly natural, dejections thin, of a reddish colour, and extremely offensive.

With more or less of these symptoms he continued till 20th December, when, while straining at stool, there came away *per anum*, a tubular, membranous substance of about 25 inches in length: on examination this proved to be a portion of large intestine, which retained its natural calibre, but the walls of which were much thickened: on dissection the three coats could readily be separated: the fatty appendices, and the three longitudinal fibrous bands, were distinctly visible.

After the separation of this portion of intestine, the evacuations though still dysenteric, were passed without straining, and often involuntarily; gradually, however, they became less frequent, and the power of retention returned. The nausea and retching ceased, but the least increase of diet never failed to be prejudicial. Bread and milk was that which suited best, and its use was continued till January 18th, when the appetite having become very keen, and the patient importunate for a change, chicken was allowed; much irritation resulted, and, though the former diet was resorted to, the patient continued very restless and uneasy, but without any other symptoms, till within about an hour of his death on the 20th January, when excruciating pain of the lower part of the abdomen was complained of.

Inspection. It is much to be regretted that Dr. Brown has lost the minute notes which he took of the appearances on dissection. The following statement is made from notes supplied by Mr. Bowstead, from recollection of the dissection, at which he assisted: their accuracy is confirmed by Dr. Brown.

The small intestines were so knotted together by adhesions that they could not be traced. The large intestines were much shortened, and not a vestige of the sigmoid flexure existed. There were morbid adhesions at the posterior part of the bladder, the lower portion of the rectum was much increased in capacity, and seemed to have been formed into a place of lodgment, where, in all probability, the intussuscepted bowel had for some time rested." 337.

The second case is still more curious than the 'first, since recovery took place.

Case 2. By Dr. Inglis.—"J. T. ætat. 40, admitted into the European Hospital, April 22d, 1835, stated that for six or seven days he had been suffering from bowel-complaint with frequent and often ineffectual calls to evacuate the bowels. There was tenderness across the abdomen, on pressure, with slight heat of skin, and frequency of pulse. On the 23d the tenesmus continued, and towards evening an increase of pain of abdomen was relieved by an anodyne enema and warm bath; on the 24th it is reported, that during the night there had been six copious, feculent evacuations without tenesmus, and during the day four evacuations scanty and mucous; on the 25th, five evacuations feculent and bilious; and 'at 8 P.M. there was expelled *per anum* a portion of intestine about seven inches in length. Says he was not sensible of its presence in the rectum, but first perceived it when partially expelled and retained at one end by the sphincter muscle; the gut appears to be in a putrid state.'

The patient continued in hospital with relaxed and irregular bowels till the 9th May, when he left much improved in health. He was the carpenter of a ship, and had made twelve voyages to India. Health in general good, and with the exception of one attack of cholera, had never suffered from serious disease: there was tendency to constipation, but to no considerable extent, and there never had been suffering from any other affection of the bowels." 346.

There may reasonably be entertained some doubts as to the fact of the above being actually a piece of intestine, since tubes of more than seven inches in length are sometimes discharged resembling intestine, but turning out to be only a secretion.

As we said before there are very many articles in this volume that will greatly interest the Indian practitioner, but which we cannot transplant to the pages of a European Journal. One, for example, is a very excellent account of the climate of *Mahabuleshwur* Hills, by J. Murray, Esq. These hills form part of the great Western Ghats, and a sanitarium or convalescent station has been fixed there, in about 18° of north latitude. It is open to the sea-breeze, and sheltered against the Easterly winds. It is situated at an elevation of 4500 feet. The climate is supposed to resemble very much that of the Cape of Good Hope. From recent information, however, we learn that Australia is becoming the favourite *sanitarium* for Indian invalids. When steam conveyance is established, and even without that, the voyage to Australia, and the fine climate of that strange land of Kangaroos, will, in a considerable degree, supersede the long and expensive voyage to Europe.

MEDICO-CHIRURGICAL TRANSACTIONS. Published by the Royal Medico-Chirurgical Society of London. Volume the Twenty-First.

[Concluded.]

OF the twenty-four papers contained in this volume, twelve were fully noticed in our last number. The remainder will form the subject of the present article.

Two or three are of a miscellaneous character, and of small dimensions. We shall dispatch them first.

I. NOTE ON THE COMPARATIVE PREVALENCE OF CALCULOUS DISEASES, &c. By Mr. COPLAND HUTCHISON, F.R.S. L. & E.

Our readers are probably aware that Mr. Copland Hutchison has endeavoured to established two statistical facts of some interest and importance—one, that calculous disease are comparatively unfrequent among sea-faring people; the other, that they are comparatively frequent in Scotland.

The former statement has met with some opposition. To this Mr. Hutchison alludes, and endeavours to meet the argument employed against him in the following manner.

"It has been stated, in opposition to my opinions, that although calculous diseases have been proved to be exceedingly rare among sea-faring people,—to amount, indeed, almost to a total exemption,—that such exemption arises more from the circumstance of this class of people having embraced their insular employment after the calculous diathesis is supposed to have been passed by—namely, the period of youth, than from any immunity they may possess from their particular situation and mode of life, according to my previous statements.

Those who have advanced this doctrine should, however, recollect that I have elsewhere distinctly observed, that boys, at the early ages of nine and ten years, were admitted into ships of war as midshipmen, officers' servants, or in the merchants' service as cabin boys; and it can be shewn, from data not to be disputed, that more than twice the number of operations for stone are performed on persons after the age of fourteen even, than before that period of life." 21.

Since Mr. Hutchison wrote his former paper, Dr. Henry Lee, of Charlotte Street, Bloomsbury, has pointed out to him a passage of Aretæus, which appears to lend some gentle confirmation to his views. Speaking of the *cure* of calculous diseases, Aretæus says:—"but diet and anointing, and sailing and passing one's life at sea—all these are remedial in diseases of the kidneys."

Mr. Hutchison adds;—

"I have applied to Sir William Burnette, the Physician-General to the Navy, for an account of such cases of stone and gravel as may have been admitted into the naval hospitals at home and abroad, from April 1830, the period of my last communication on this subject to the Society, up to the present date, and the answer returned is as follows:—'I have caused the returns of the naval hospitals at home and abroad to be carefully examined from April 1830 to the present time, with reference to the prevalence of calculous disorders, and the only instance of the kind is one case of renal calculi, in Malta hospital, in Michaelmas quarter, 1833; the patient was purser of the Pelican sloop of war.' P.S. 'He was discharged, cured, in the same quarter.'

'Signed. WILLIAM BURNETT,
'26th Nov. 1836.'

The average number of seaman and marines annually voted by parliament from 1830 to the present date, *including* 2.000 *boys*, has been 30,000. The latter are particularly specified, in the navy estimates, as boys." 23.

Such is the amount of confirmation, afforded to his former statements, in Mr. Hutchison's present paper. We would merely suggest for Mr. Hutchison's consideration, and as reasonable elements in his calculations, that stone is, on the whole, the diseases of early and advanced life—that a delicate boy

would not go to sea, this stormy element being usually selected by the hardy and the wild—and that the old sailor will frequently have quitted the navy and its institutions, when calculus disease has overtaken him. We do not say that these considerations explain all the immunity from stone on the part of sailors, contended for by Mr. Hutchison. But we think he will admit that they deserve to be taken into the account.

II. HISTORY OF A FEMALE WHO HAS FOUR MAMMÆ AND NIPPLES. By ROBERT LEE, M.D. F.R.S., Physician to the British Lying-In Hospital, and Lecturer on Midwifery at St. George's Hospital.

Our friend Dr. Lee is never idle. Ever on the watch for some interesting fact, or some broad generalization in the field of science, his own department of it is continually receiving some accessions at his hands. The following fact is curious—

Mrs. ——, æt. 35, was delivered prematurely of a still-born child on the 21st July, 1835. Soon afterwards, the mammæ became excessively painful and distended, and she had a severe attack of fever with delirium. Though the symptoms became daily more aggravated, a week elapsed before she would permit the condition of the breasts to be ascertained. On inquiring into the cause of this unwillingness to allow the necessary examination of the mammæ to be made, Dr. Lee was informed by her sister-in-law, that she had two mammæ and two nipples on each side, and that this peculiarity, which she was anxious to conceal, had been observed ten years before, when her first confinement took place.

After long entreaty, Dr. Lee obtained leave to inspect the breasts, and was surprised to find that there were two on each side, as had been represented; the two of the same side being separated by a deep oblique depression. The inferior or pectoral mammæ, as they were afterwards termed by Sir Astley Cooper, were fully developed and in their natural situation, and their nipples, areolæ and glands, presented nothing unusual in their appearance. Near the anterior margin of the axilla, a little higher up on each side, was situated another mammæ, about one-sixth the size of the others. The nipples of these were small and flat, but when gently pressed, a milky fluid, which had all the external characters of the milk secreted by the other breasts, flowed copiously and readily from several ducts which opened on their extremities. When milk was drawn from the lower breasts, a small quantity usually escaped from the nipples of the superior breasts, and when the draught came into the former, the latter invariably became hard and distended.

Mrs. —— had previously borne several living children, and five years before this period had twins, when she had a severe attack of uterine inflammation, and suffered much from painful distension of the two upper breasts. In consequence of the flatness of their nipples, she has never been able to suckle any of her children with these. The vagina, orifice of the uterus, and all the other organs, besides the mammæ, in this female, are well formed.

"I mentioned," continues our excellent friend, "this case to Sir Astley Cooper at the time it first came under my observation, but he did not see it with

me until the 28th February, 1836, several months after the secretion of milk had entirely ceased. When Sir Astley saw the mammæ, he said there could be no doubt that there were two on each side, an axillary and pectoral breast, and that nature had separated them completely from each other. He considered it proper that some record should be given of a case, which he thought to be without a parallel in this country.

Mrs. —— again became pregnant, and was safely delivered on the 19th July, 1837, of a living child, which she now suckles with the pectoral breasts, and the axillary breasts again present the same appearances as those which have now been described.

The preceding case furnishes one of the best examples of quadruple mammæ in the human subject which has yet occurred." 268.

Dr. Lee has collected the particulars of five other cases from foreign authors. The knowledge of the occasional occurrence of the fact may possibly be useful. At all events, the fact itself is one of the "curiosities" of Nature. Dr. Lee adds in conclusion:—

In some women only one breast has been developed, others have had two nipples placed on one mamma, and a few individuals have had three breasts, two in the natural situation, and a third situated in the middle of the two others. Only one case has been recorded of five mammæ in the human subject.*

III. Results of Poisoning by Sulphuric Acid. By John Wilson, M.D. Physician to the Middlesex Hospital.

Two cases are detailed.

1. In one, the patient lived for six months after swallowing a part of two-pennyworth of oil of vitrol. She ejected, in a violent fit of coughing, a cylindrical tube, about eight or nine inches in length. On the morning of the 14th of November, she had a shivering fit, preceded by vomiting, and succeeded by great pain in the region of the stomach, &c. and fatal collapse. She died on the 17th.

Examination, eighteen hours after death.—Body extremely emaciated; the lower two-thirds of the œsophagus thickened and narrowed, internally very vascular, irregular, and softened; the upper third shining like an old cicatrix. In the stomach, opposite to the spleen, was an opening of the size of a half-crown piece with softened edges; there was great softening of the mucous membrane of the stomach; the abdomen contained a quantity of dark-coloured fluid, but no peritoneal inflammation.

In the interval between her swallowing the acid, and her fatal seizure, she had suffered, amongst other symptoms, considerable difficulty in swallowing. Some thought it would be advisable to pass a bougie down the œsophagus. But Sir Charles Bell and Dr. Wilson thought otherwise, and the dissection shewed that they were right.

2. In the second case, death occurred twenty-two hours after swallowing from two to three ounces of strong sulphuric acid, which remained on the stomach for a quarter of an hour.

Inspection, fourteen hours after death —Lining membrane of the mouth,

* Dict. des Scien. Med. Tom. XXXIV. p. 529.

pharynx, and œsophagus, of a silvery grey speckled appearance, like a snake's skin, from some of the carbonized matter adhering to the deeper parts of the rugæ, the more prominent being of a lighter appearance; the membrane of the tongue easily peeled off.

The stomach was very much distended, but contained only air, and when opened, its mucous coat was nowhere visible, from its entire surface being covered with a black pitch-like substance, which did not wash off with ease, and when scraped it shewed the mucous coat of a pink colour, much swollen, but entire: the commencement of the duodenum had a similar appearance, which soon became less marked, and nearly disappeared at the beginning of the jejunum, when it gradually assumed the greyish appearance, somewhat like that of the œsophagus, but of a much more dull colour, all of which seemed to terminate with the ileum.

The peritoneal coat of the small intestines, and particularly that of the stomach, was much inflamed, but no albuminous deposits were seen.

IV. HISTORY OF A CASE OF POPLITEAL ANEURYSM. With observations. By SAMUEL HADWEN, House-Surgeon to the Lincoln Hospital.

This case is interesting on several accounts, though it does not seem to us to support altogether the observations appended to it.

Case. John Asman, aged 23, a muscular man who had been accustomed to violent exertions, was seized with pain in the right leg and knee, succeeded by swelling. The complaint was thought to be rheumatic.

Three months afterwards, July 16th, 1837, he came under the care of Mr. Hewson, surgeon to the Lincoln Hospital. He had then an aneurysmal tumor in the popliteal space, about as large as an orange, with diffused tumefaction around it. There was distinct pulsation, synchronous with the heart, and clear bruit in the swelling, especially at the inner side of the calf. Pressure upon the femoral artery suspended the pulsation, rendered the tumor soft, and diminished its size. The heart and arterial system, examined with the stethoscope, appeared perfectly healthy.

On the 18th, Mr. Hewson placed a ligature upon the superficial femoral artery at the margin of the sartorius muscle. Before the patient was removed from the table, it was observed that the aneurysmal tumor was as large as ever, and the tension greater than it was before the application of the ligature; there was, however, no return of pulsation. He suffered very severe pain, for a few seconds after the ligature was tightened, down the leg, and a slight irregularity of the pulse, not amounting to an intermission, could be occasionally but unfrequently perceived.

An hour after the operation, no pulsation could be perceived in the tumor: but after three hours more it had returned with some force. Twelve hours after the operation the tumor did not appear quite so large as it had been, and was of the natural temperature; it was, however, deemed expedient to envelop it in flannel. There was a regular, but indistinct pulsation in the tumor, which was not synchronous with the pulse.

19th. Integument over the tumor yellow, tense, and resistant. A feeble pulsation could be felt, and an obscure murmur heard.

27th. Pulsation not perceptible in femoral artery below the ligature, but distinct in the tumor at the ham, which was still hard and resisting. Leg, from knee to toes, beginning to assume an œdematous character, and of great size. Wound healed, save where the ligature projected through it. Heat of leg great. Occasional paroxysms of severe pain, extending from the ham down the leg.

29th. Temperature between the toes of each foot 101° Fahr.; at the external surface of the calf, which was in contact with the bed, 102°; the same part of the unaffected leg, 98°. On applying the fingers to the middle of the thigh there was felt a pulsation, and, with the stethoscope, there could be traced a distinct arterial bruit along the inner side of the thigh in the course of the artery, from about three inches above the knee to the groin, least audible at the lower part, and gradually becoming more loud to a little above the ligature, where it was very strong and distinctly heard. Next day it was found that pressure on the artery at the groin completely suspended the pulsation in the sac, which was not the effect of pressure about the middle of the thigh, where the bruit was heard.

About 10, p. m. of that day (30th) about eight ounces of florid blood issued from the wound. There was some puffiness around the cicatrix, and about an inch and a half to the outer side, a distinct pulsation. A little pressure and cold were applied.

"31st. At five o'clock this morning there was a slight escape of blood, not more than an ounce. About twelve at noon the hemorrhage returned with such violence than an arterial jet was forced out between the dressings to some distance. It was decided that the femoral artery should be tied again immediately below Poupart's ligament, which was accordingly done by Mr. Hewson.

The ligature was firmly tied, and the beating previously observable at the seat of the former ligature, and in the surrounding tumefaction of effused blood, immediately ceased. It was also thought the aneurismal sac and calf were less distended; the pulsation in the former, and the bruit along the course of the femoral artery, were stopped.

In the evening it was found that there had been a slight oozing of blood from the situation of the first ligature, and in the surrounding tumefaction, which was reduced in size, a decided pulsation could be felt, and, with the stethoscope, a faint bruit." 323.

The tumor was softer; temperature between the toes 90°, gradually rising as the instrument advanced up the leg, and at the calf the mercury stood at 102°.

On the 1st August, a bruit was no longer perceptible with the stethoscope. At 8, p. m. of the 2nd, the bleeding suddenly recurred from the wound in the thigh where the first ligature had been applied. Pressure immediately above the wound controlled it, but, as soon as it was removed, the blood, in a stream as large as a quill, was projected upwards a foot and a half. The cicatrix was laid open, and an ineffectual attempt having been made to find the mouth of the bleeding vessel, amputation of the limb was immediately performed. The upper part of the artery was found to be quite separated from the lower, upon which the ligature still remained, and to present an open mouth.

Great collapse was the immediate effect of the operation, but he rallied from this, and went on well enough until the 21st. At 4, a. m. of that day

the wound at the groin was observed to bleed; the blood was florid and arterial, and did not come away in a full stream, but gently oozed up, and apparently did not amount to more than five or six ounces. A compress of lint and adhesive plaster was applied. Digitalis was given, and his generous diet gave way to one of milk.

At 11, a. m. there was a return of hæmorrhage to a greater extent. The pulse was full and bounding. It was proposed to tie the external iliac artery, and secure the epigastric and circumflexa ilii; but the patient would not consent. He was therefore bled in the arm till the pulse became smaller and weaker, and a bladder containing salt and ice, pounded together, was applied over the groin.

About six o'clock in the evening a slight discharge of blood took place, and later at night the pulse rose in volume and strength. The blood removed in the morning presented a thin buffy coat.

22d. A very large and alarming bleeding suddenly burst forth at six o'clock, p. m., which produced a frightful effect, and placed the poor fellow in greater jeopardy than he had ever apparently been before. At his request, the operation was therefore instantly performed; brandy having been first given in small but frequently repeated doses.

The mode adopted by Sir A. Cooper was followed. When the peritoneum was arrived at, the epigastric artery was nearly exposed at the lower part of the wound, and by a little careful dissection, was cleared and tied, the subjacent membrane having sustained no injury. The peritoneum was then drawn to the inner side of the wound along with the cord, and the external iliac having been brought plainly into view, an armed needle was passed beneath it, and the ligature securely tied. The pulsation at the groin ceased. He nearly sank during the operation, but, under the influence of stimulants, he pulled through it. He did well until the 28th, when, at noon, hæmorrhage again appeared at the wound in the groin, and it is thought many ounces of blood were lost. It flowed at first gently from the part, afterwards in a larger stream, but not in a jet. Pressure with the hand restrained it. Graduated compresses of lint were carefully applied, and a truss so adjusted as to bring the pad to make firm pressure directly upon them. The truss, from the tightness with which it was applied, produced pain, which, however, an anodyne relieved. On the 30th, the truss was removed, the wound found to be healthy, and the instrument re-applied. Pulsation of the internal pudic artery was distinguishable. On the 4th of September, the stump was healed. On the 29th day, the ligature came away from the external iliac. The wound cicatrised, and, on the 101st day after the superficial femoral artery was tied, the man was down stairs, and fast recovering flesh and strength.

The observations of Mr. Hadwen are brief. He points out, what has often been insisted on, the disadvantages to which ligature of the common femoral artery is exposed, from the variable point of origin of the profunda and internal circumflex, as well as from the contiguous origins of the epigastric and the circumflex iliac branches.

"We are acquainted," he goes on to state, "with six recorded instances in which the common femoral artery has been selected for the application of a ligature, and two not hitherto given to the public. The dangerous hemorrhage which led the talented Abernethy to the performance of an operation never before attempted,

was produced by a ligature placed upon this vessel. Sir A. Cooper has twice tied this artery; in one instance with success, in the other, hemorrhage arose on the fourteenth day, and death was the consequence. Sir B. Brodie has also tied this artery, and the result was hemorrhage and death. Dr. Murray applied a ligature to it, and owing to a violent bleeding which placed his patient when the ligature was about to separate, in the utmost danger, he very properly tied the external iliac. Mr. Ivory tied this vesel, and in consequence of subsequent bleeding was under the necessity of taking up the external iliac. These are the six cases already recorded. In five of them violent bleedings followed, and in two of them death was the consequence, and would, in all probability, have occurred in the remainder had not the external iliac been tied. The two other instances alluded to occurred to Mr. Hewson. One was attended with a favourable result, the other with such bleeding that nothing, probably, but the operation to which it led, could have prevented a fatal termination. So that of eight cases in which a ligature was applied to this artery, six were attended with consecutive hemorrhage, two with death, and two with a favourable separation of the ligature; giving to this operation a highly dangerous character.

Contrast with this the result of tying the external iliac. Mr. Hodgson, when he published his work on the arteries, knew of twenty-two cases where the iliac was tied, and not in one of these was there any secondary hemorrhage. Since that period the operation has been performed a great number of times, and, as far as I can ascertain, with the same exemption from this alarming occurrence. I cannot, indeed, find a single case recorded of bleeding attending the separation of a ligature placed upon this artery; so that it may be said not merely, as Mr. Hodgson observes, that the external iliac may be tied with as much safety as any artery to which a ligature has been applied, but that, of all the large vessels of the human body, it is the one that may be tied with the greatest security, as far as the effects of the operation are concerned, and with the best effects upon diseases to which it is applicable.

There is no case, except that of wound of the artery at the groin, in which tying the common femoral possesses any advantage over the ligature of the iliac; I am therefore justified in concluding that the common femoral artery ought never to be selected, in any case of disease, for the application of the ligature, and that the operation should be exploded." 330.

We fully agree with Mr. Hadwen, indeed similar sentiments have been more than once expressed in this Journal, on the dangers of tying the common femoral artery. But there are two points, one of fact and one of doctrine, on which we cannot go so far as he does.

The point of fact is this. Mr. Hadwen says there is no authentic instance of secondary hæmorrhage after ligature of the external iliac artery. Singularly enough, his own case *is* such an instance. The patient recovered it is true, but so fortunate a result cannot always be counted on. We believe there are *two other* instances on record. In a case in which Sir Astley Cooper tied the external iliac, fatal secondary hæmorrhage occurred, from the site as we have understood, of the epigastric artery. And a similar accident happened to Dupuytren. We remember reading the latter case, and, if we are not much mistaken, it was copied into an early number of this Journal.

Here then are three facts contrary to the supposition that secondary hæmorrhage has not followed the ligature of the external iliac artery.

The point of doctrine hinges on the point of fact. If hæmorrhage has followed ligature of the external iliac, it follows, of course, that this operation is not one of such absolute safety as is represented. Now the opera-

tion on the lower part of the vessel is open to strong physiological objections. The ligature is applied by the method of Sir Astley Cooper, close to the origin of the epigastric and circumflexa ilii. There is insufficient room for the inferior clot, and the very reason which makes the ligature of the common femoral dangerous, makes (not quite to the same degree) the ligature of the lower part of the external iliac dangerous too. This consideration, as well as some others connected with the method of proceeding, have almost proscribed the operation of Sir Astley Cooper from practice. It is little more than what the French call a "Procés d'Amphithéatre."

Before we conclude, we would remark that the idea of the great safety of ligature of the external iliac, in any part of its course, is exaggerated. Of three cases of this operation, which have occurred under our immediate observation, two have been fatal, and one (the high operation) was attended with secondary hæmorrhage. At the time when Mr. Hodgson's statistical calculations were made, there had been a run of luck in favour of the operation This has often happened with lithotomy.

V. ACCOUNT OF A CASE OF ENORMOUS VENTRAL ANEURYSM; WITH THE POST-MORTEM APPEARANCES. By Sir DAVID J. H. DICKSON, M.D.F.R.S. Ed. &c. &c. &c. Physician to the Royal Naval Hospital, Plymouth.

Our friend Sir David Dickson, is one of those who do not slumber at their post. The facts which occur at the Naval Hospital are sure, if valuable, to be communicated to the profession.

Case. A gunner, aged 36, was sent to the hospital at Jamaica, for reputed paraplegia, on the 22d September, 1836; discharged invalided on the 16th December; and received into the Plymouth Hospital on the 20th of March, 1837.

On admission, he complained, chiefly, of pain and uneasy feelings in the sacral region and loins, attended with weakness, partial loss of power, and numbness in the lower extremities, and imperfect command of the sphincter muscles; but his general health was not materially impaired. There was also a deep-seated and ill-defined hardness, or swelling, in the left side of the abdomen, which was first referred to an affection of the spleen, but which, on further examination, was discovered to be a large diffused pulsating tumor, either in contact with the abdominal aorta, or more probably arising from an aneurysm of that great trunk itself or the common iliac artery; and thus the deep-seated pains, and numbness in the sacral region and thighs, at first stimulating rheumatism, and afterwards lumbar abscess, as well as the occasional alterations of loose and torpid bowels, eneuresis, &c. were accounted for, by the compression of the vessels and nerves, and especially the hypogastric plexus. Although the tumor enlarged, his general health, on the whole, improved, and on the 6th of September he was as well as usual. But on that day, soon after ascending some stairs, he was seized with excruciating pain in the right iliac region, followed by excessive faintness, and a death-like paleness of the countenance, indicating the rupture of the aneurysm, and, after suffering much pain, he expired at 6, p. m.

Dissection. "Upon opening the cavity of the abdomen, a small quantity of

bloody serum escaped. The posterior reflection of the peritoneum, on the right side, presented an ecchymosed appearance, from subjacent semicoagulated blood, which, effused in vast quantity, had raised the membrane from its attachments behind, and separated the laminæ of its different processes from each other. The blood was discovered to have escaped by an ulcerated opening of the size of a shilling, in the side of an immense tumour near to the right kidney, which it had displaced forward and laterally; and which, on further examination, proved to be an enormous aneurysm of the descending aorta. The aneurysmal dilatation, upon further investigation, was found to commence from the posterior part of the artery, two inches above the cœliac axis, by a kind of neck, which extended to two inches and a half above its division into the illiac trunks; where, suddenly bulging out, it expanded over the whole of the abdomen. The tumour was so immense indeed, that with the exception of the cæcal region, from which it diverged to the left, it might be said to occupy the epigastric, both hypochondriac, the umbilical, and left iliac regions, and the pelvis. But to describe it more minutely, the aneurysm, accommodating itself to the concavity of the diaphragm, to which, as well as to the posterior inferior surface of the liver, it intimately adhered, lay behind the hepatic vessels and ducts, the pancreas, duodenum, &c. It was attached to the false ribs and spine, and descending between the latter and the vena cava and aorta, it continued downwards behind the ureters and iliac vessels, but separated from them by the iliac fascia, which, greatly condensed, formed one of its anterior coverings, and beneath which it insinuated itself. The tumour thence protruded in a conical form under Poupart's ligament, and appeared like an aneurysm of the left iliac artery. This vessel lay in front and the ureter crossed it obliquely, while the psoas lay internally. The iliac muscles and crural nerve externally, and the great sciatic nerve were closely attached to its posterior inferior part. When this immense aneurysm was laid open, it was found to be nearly filled with coagulated blood, of the consistence of wet clay, and some concentric layers of nearly colourless fibrine adhered, though not vascularly, to its walls. The lining of the sac, on the tumour being emptied, appeared of a vivid red colour, mottled with osseous scales, deposited in the fibrous tunic, which, in a great measure, prevented its collapse. A careful examination was then made of the coats of the aneurism: the external covered it completely, except where it adhered to the spine, where the tunics had entirely disappeared, and the last dorsal and first lumbar vertebræ were also partially absorbed. The middle coat was continued over the sac, or so gradually lost in the other coverings, which in some places were increased in thickness to nearly two inches, that its termination could not be detected. The internal tunic was continued for some way into the sac, where it became broken down, and undistinguishable from the adjoining clots. The abundant deposition of ossified matter in the middle coat prevented the collapse of the artery, from the pressure before and behind; and, by maintaining its cylindrical form, preserved a channel for the blood. Two small appendages, resembling knuckles, of intestine, were observed on the iliac portion of the great tumour, and containing blood of the same appearance; but they were distinct from it, being closed by the adhesion of their necks; and their walls were thin and of a purple grape colour. The abdominal and thoracic viscera, generally, were normal, with the exception of some pleural adhesions; and the body was muscular and not much emaciated. So intimate was the attachment of the tumour to the spine, that the lumbar and three dorsal vertebræ were removed with it." 405.

A remarkable instance of aneurysm!

The next two articles are of a physiological character.

VI. ON NECROSIS; BEING AN EXPERIMENTAL INQUIRY INTO THE AGENCY ASCRIBED TO THE ABSORBENTS, IN THE REMOVAL OF THE SEQUESTRUM. By GEORGE GULLIVER, Esq. Assistant Surgeon, Royal Horse Guards.

The object of Mr. Gulliver has been to determine. by experiments on dogs and rabbits, in the first place, what becomes of the dead bone in necrosis; and, in the second place, the means by which it is replaced. But the present paper is exclusively devoted to the examination of the first question—whether dead bone admits of removal by absorption.

"While engaged in the formation of the catalogue of the museum of the Army Medical Department at Chatham, 1829, I was led, from the examination of numerous specimens of necrosis in that collection, to entertain a suspicion that the doctrine of the absorption of dead bone, so confidently asserted in the schools as an ascertained fact, might notwithstanding be founded in error,—and a further attention to the subject tended to confirm this persuasion. As far as I could judge from my own observations, it did not appear necessary to attribute the form and appearance of the dead bone to the agency of the absorbents after it had ceased to be a part of the living body, the facts appearing susceptible of explanation otherwise; while many cases presented phenomena altogether at variance with the received opinion." 3.

Mr. Gulliver observes that the facts which are brought forward in proof of the absorption of dead bone are—the gradual disappearance of the sequestrum in many cases of alleged necrosis; the irregular and eroded state of the dead portion; the contact of granulations with the indentations on its surface; the absorption of the fang of a transplanted tooth; and finally, (on the authority either of Mr. Abernethy or of Sir William Blizard, that portions of dead bone have diminished in weight, after having been kept in contact with the granulations of an ulcer.

1. Upon the latter fact Mr. Gulliver remarks, in a note—

"In Mr. Palmer's edition of the works of John Hunter, the following note appears. 'Portions of dead bone were often observed to be entirely absorbed in cases of necrosis; and in some experiments made by Mr. Thomas Blizard, in which disks of bone were bound on over ulcers, the surfaces of these disks were found to be eaten out, or destroyed, just as in common caries.' Vol. I. p. 255. The result of my experiments justifies the belief that there must be some mistake in this statement." 4.

And he mentions a suggestion of Dr. Davy, that, if dead bone be subjected to the combined action of air, heat, and moisture, it might lose weight from the decomposition of its animal part, especially if the discharge were long confined.

2. In opposition to the reputed fact of the absorption of dead bone confined in old, Mr. Gulliver urges that Wiedmann, F. Ribes, Jules Cloquet, had each observed examples in which it had been incarcerated for years, without apparent diminution, in a new osseous cylinder, from the internal surface of which more or less purulent matter was secreted. Mr. Liston adduces cases of detached pieces of bone in similar circumstances long remaining unaltered in form, in some of which amputation of the limb was required from the irritation of a dead portion so small, that it is inconceivable how it could have resisted absorption, if that were the process

employed by nature for the removal of dead bone; and Mr. Syme mentions similar instances.

We would remark that a number of negative instances do not disprove the occasional occurrence of a fact. No one contends that a sequestrum is always absorbed. Mr. Gulliver goes on to remark:—

"But if the sequestrum is not absorbed, what becomes of it? It may be remarked, in the first place, that they are not all cases of necrosis that have been so denominated. Under this head, in the museums of anatomy, a class of specimens is sometimes presented to our notice which seem to me to admit of an explanation differing from that commonly assigned to them. These are generally the shafts of the long bones, prodigiously thickened and irregularly perforated with holes for the transmission of blood vessels, or by cloacæ leading to the cavities of abscesses, and sometimes singularly crooked and mis-shapen, as if at one period of the disease they had been softened, and influenced by mechanical force. In the centre of such bones a very small portion is sometimes found dead and detached, but more frequently the shaft is simply very thick and dense throughout. The former have frequently been regarded as examples in which the absorption is nearly effected; the latter as the completion of this process. It is probable that both are instances of long continued inflammation of bone, the first attended with death and separation of a small central fragment, which had afterwards undergone no alteration of form, and that the second was never at any period a case of necrosis.

The deposition of a cylinder of new bone around the old one, is not an absolute proof of the death of the latter, as I have had frequent opportunities of ascertaining in the course of my experiments. Nature often exhibits a prospective contrivance in the formation of a new osseous shell, or in the enlargement of a part of the old shaft, before actual necrosis has taken place; a fact which has not escaped the observation of Mr. Russell and Dr. Macartney. In the museum of St. Bartholomew's hospital, there is the tibia of a dog incased in a shell of new bone, and partly detached, but the injection has run pretty freely into the old bone.* In such instances, the part which has suffered the most intense inflammation may become partially eroded, and gradually removed by absorption, if it retain its vitality long enough, while a deposition of new osseous matter gradually supplies the loss, death of the old bone having formed no part of the phenomena. This is probably the explanation of many cases of alleged absorption of dead bone. But if a piece of bone truly dead be inclosed within a new osseous cylinder, then it is indeed a bad case of necrosis, which the patient will carry to the grave with him, unless relieved of the sequestrum otherwise than by absorption.

The worm-eaten appearance on the surface of many sequestra may be explicable in two ways. The most numerous examples of this kind are those of necrosis of the inner layer of the shaft of the long bones, with thickening of the outer portions,—a form of disease known to Bordenave, Haller, Collison, and Tenon, and since more fully explained by Brun, Brugnoni, Penchianati, Dr. Knox, Mr. Syme, and others. In such cases, irregular death, and separation of a portion of a bone, may be expected to produce an equally irregular surface: the part would not necessarily die in a determinate form, any more than in cases of sloughing of soft textures; and when the outer layer of an entire cylinder of necrosed bone presents erosions on its surface, it seems more reasonable to refer these to the effect of the ulcerative process, while the part retained its vitality, than to the action of the absorbents after its death.

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* It is proper to notice that Mr. Stanley considers this to be doubtful. The preparation will be found under the head of "Bone," No. 10.

The aspect and situation of the granulations is equally inconclusive. They are seen to be extremely vascular, and accurately corresponding to the indentations on the under surface of a superficial layer of dead bone in progress of exfoliation, a case in which it has not often been supposed that the dead portion suffers diminution from the absorbents, the action of which is confined to the surface of the living bone in immediate contact with that about to be separated. The vascular structure adjusted to the superficial excavations on the surface of the sequestrum, is what might be expected from the work of exfoliation in some instances, or from the extension of the ossific process into the vacant spaces in others." 7.

3. Mr. Gulliver is not aware that the absorption of the fang of a transplanted tooth is a well-authenticated fact; but, if so, it would seem to indicate that the tooth, having preserved its vitality, had become a part of the living body to which it was attached, and accordingly subject to its laws.

Such are the reasonings of Mr. Gulliver. It will at once be admitted that they are fair and forcible, that they explain many supposed instances of absorption of dead bone, and that they tend to throw doubt upon the doctrine which unreservedly avails itself of such a process. But they are certainly not so staggering nor so conclusive as to make us deny its existence.

We turn to Mr. Gulliver's experiments, nineteen in number. We shall select such as are calculated to establish leading points.

Experiment 1.—A thin portion of the surface of the shaft of a human tibia was kept in contact for seventeen days with a large ulcer, studded with granulations, in a man's leg. The bone having been removed, dried, and weighed, was found to have undergone no alteration either in weight or appearance.

In the next three experiments a portion of human bone was introduced into a seton in the back of the neck. The following may be considered a representative of all.

Experiment 4.—A section of the shaft of the human humerus, weighing 10.7 grains, and comprehending the entire thickness of the bone, was introduced into a seton at the back of a man's neck, and retained there sixty-five days. The suppuration was at first scanty, but became copious during the latter five weeks. The bone was removed, and found to have undergone no alteration in appearance, but it had increased exactly one-tenth of a grain in weight, probably from some albuminous matter which was not entirely dissipated by drying.

In the next four experiments, a portion of bone, in three instances human, was introduced into the soft parts of a dog's leg. Two of the experiments will exhibit the results of the four.

Experiment 6.—A portion of the shaft of a dog's thigh-bone, weighing 7.8 grains, was introduced deeply between the muscles and periosteum of another dog's leg, and kept there two months. Suppuration was soon established, and continued till the animal was killed. The bone had suffered no alteration whatever. The cavity in which it had lain was very vascular, being made deely red by injection with size and vermillion.

Experiment 8.—A thin portion of the shaft of the human humerus was

placed in the subcutaneous cellular tissue of a dog's leg, and allowed to remain there four months. The wound soon healed, and continued sound till the animal was killed. The bone had suffered no change whatever: it adhered slightly to the cellular substance, so as to stretch out the filaments of the latter as the bone was pulled away.

In the remaining eleven experiments, portions of bone, either human or otherwise, were introduced into the medullary canal of the tibia of rabbits, and retained there for a longer or a shorter time. The main experiments are:—

Experiment 11.—A portion of the shaft of a rabbit's tibia, weighing 2·1 grains, was put into the medullary canal of the tibia of another rabbit, and retained there thirty-four days.

The foreign bone was found to have undergone no change; it was surrounded by highly vascular lymph, and there was a large cyst, which had not yet burst, containing a white, concrete, purulent matter, and communicating with the cavity of the tibia. (E. P. B. 35 and 36, in the museum of the Army Medical Department.)

Experiment 12.—A piece of the shaft of a rabbit's tibia, weighing 1·5 grain, and a bit of the spongy extremity of the same bone, weighing one grain, were kept in the medullary cavity of another rabbit's tibia for twenty-five days. The weights were marked on these portions of bone with a black-lead pencil.

On being removed and dried, the first portion was found unchanged, and the second had increased one-tenth of a grain in weight, probably from matter which had not been dissipated in drying. The pencil marks were not obliterated.

There was much inflammation of the limb, and pus with vascular lymph surrounded the adventitious portions of bone. (E. P. B, 48 and 49, in the museum of the Army Medical Department.)

Experiment 15.—A bit of the shaft of a rabbit's tibia, weighing 2·2 grains, was introduced into the tube of another rabbit's tibia, and kept there seven weeks. The wound healed in the course of a few days.

The adventitious bone weighed 2·37 grains, and it was firmly imbedded in the medullary canal. The increase of weight was accounted for by two well-defined specks of new osseous matter deposited on its surface; and these deposits were removed and analysed by Dr. Davy, who found their composition to be that of true bone. (E. P. B. 57 and 58, in the museum of the Army Medical Department.)

Experiment 19.—A splint of a man's bone was introduced into the medullary canal of a rabbit's tibia. The animal became healthy and playful after the operation, and was kept as a pet in the house, for upwards of fifteen months, until it died. The inclosed bone was found to have suffered no change; it was separated from the tibia, which was somewhat thickened, by boiling. (C. 58, in Mr. Liston's collection.)

The foregoing experiments are certainly interesting, and must tend to

breed extreme scepticism with regard to the absorption of dead bone. Mr. Gulliver remarks, and fairly enough, that:—

"These experiments are selected from a great number which I have made, all tending to the same conclusion. They have not been sufficiently varied and extensive to admit of being adduced as peremptory proof of the impossibility of the absorption of dead bone, in opposition to the incontestable power of the absorbents in the removal of inorganic particles from the living body, but I conceive that it is now fully established, with how much difficulty dead bone is subject to absorption, and that whatever may be the agency of this process in the removal of living parts, it can no longer be regarded as the means by which the sequestrum disappears in cases of necrosis." 18.

There is a point to which Mr. Gulliver directs attention, and which, undoubtedly deserves it—the deposition of new bone upon the old, and their adhesion or consolidation.

"It appears to me to be a very interesting fact, that a tissue which has been long dead should possess the power of attracting, as it were, particles similar to itself from the blood. To complete the resemblance to assimilation, we have only to suppose the dead matter to be porous, and the new particles attracted to its interstices." 19.

Unless our ideas on the subject of the connexion of living and dead parts are erroneous, we must suppose that some vitalization of the included bone took place, in order to enable the new bone to adhere to it. If such adhesion could occur, why should not absorption? The latter appears to imply less vital force and exertion, because the absorbed part may be passive, as the aliment received into the system is. But leaving this question, we beg to call our readers' attention to the entire memoir, and the actual experiments.

VII. On the Proportions of Animal and Earthy Matter in the Different Bones of the Human Body. By G. O. Rees, M.D. F.G.S.

The object of Dr. Rees has been to determine the cause of the great discordance in the results of chemists who have occupied themselves in determining the proportions of the earthy and animal matter contained in human bone. He thought that different bones might possibly possess different quantities of each. The result of analysis has proved this supposition correct. It seems tolerably certain that the differences in the results of chemists may be assigned to three different causes, viz.

"1st. The employment of different bones for analysis; nearly every bone having a proportion of earthy and animal matter peculiar to itself.

2nd The bones used for examination being differently prepared, and containing more or less of fat, which will be estimated in the analysis as animal matter of bone, whereas it is merely an infiltration into its structure.

3d. The loss of different quantities of carbonic acid during decarbonization, owing to its conversion into carbonic oxide gas, which escapes at a low heat from carbonate of lime when carbonaceous matter is present. A portion of carbonic acid must almost necessarily be lost by bone-ash during incineration." 408.

The experiments of Dr. Rees were made on bones from the same adult.

They were similarly prepared, quite dry, and free from fat, periosteum, and cartilage. After the decarbonization of each specimen, he took the precaution of supplying the loss of carbonic acid which it had experienced, by moistening the result with a solution of sesqui-carbonate of ammonia, and then carefully applying heat to low redness.

The following were the results of analyses:—

	Earthy matter	Animal matter.
Femur*	62.49	37 51
Tibia*	60.01	39 99
Fibula*	60.02	39 98
Humerus*	63.02	36 98
Ulna*	60.50	39.50
Radius*	60.51	39.49
Temporal bone†	63.50	36.50
Vertebra‡	57.42	42.58
Rib§	57.49	42.51
Clavicle	57.52	42.48
Ilium‖	58.79	41.21
Scapula¶	54.51	45 49
Sternum	56.00	44 00
Metatarsal bone of great toe	56.53	43 47

The following conclusions seem to flow naturally from the foregoing analyses:—

1st. The long bones of the extremities contain more earthy matter than those of the trunk.

2d. The bones of the upper extremity contain somewhat more earthy matter than the corresponding bones of the lower extremity; thus the humerus has more than the femur, and the radius and ulna more than the tibia and fibula: this difference is, however, small, being about one half per cent.

3d. The humerus contains more earthy matter than the radius and ulna; and the femur more than the tibia and fibula.

4th. The tibia and fibula contain, as nearly as possible, the same proportions of animal and earthy matter, and the radius and ulna may also be considered alike in constitution.

5th. The vertebra, rib, and clavicle are nearly identical as regards the proportion of earthy matter; the ilium containing somewhat more of earths, the scapula and sternum somewhat less; the sternum containing more earthy matter than the scapula.

6th. The bones of the head contain considerably more earthy matter than the bones of the trunk, as observed by Dr. J. Davy; but the humerus and other long bones are very nearly as rich in earths.

7th. The metatarsal bones may probably be ranked with those of the trunk in proportional constitution.

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* Solid parts of the shafts were used for experiment.

† Hard squamous portion.

‡ Arch of dorsal.

§ Solid external crust.

‖ Near the crest.

¶ Coracoid process.

To determine the correctness, or otherwise of the supposition that the more cellular bones and the cancellated structure contain an increased proportion of animal matter, Dr. Rees made the following analysis:

	Earthy matter.	Animal matter
Cancellated structure from the head of the femur	60.81	39.19
Cancellated structure from the body of a rib	53.12	46.88
Solid structure of the same rib	57.77	42.24

The cancellated structure in the rib does therefore contain less earthy matter than its compact tissue.

Dr. Rees was curious to ascertain whether the same law of relative proportion held good in the fœtal and adult skeleton. He procured several bones of a fœtus, full grown, within a few days, and analysed them, with the following result:—

	Earthy matter.	Animal matter
Femur	57.51	42.49
Tibia	56.52	43 48
Fibula	56.00	44.00
Humerus	58.08	41.92
Radius	56.50	43.50
Ulna	57.49	42.51
Clavicle	56.75	43.25
Ilium	58.50	41.50
Scapula	56.60	43.40
Rib	57.35	42.65
Parietal bone	55.90	44.10

Thus in fœtal as in adult bones, those of the upper extremity contain somewhat more earthy matter than the corresponding bones of the lower extremity.

The humerus contains more earthy matter than the radius or ulna, and the femur more than the tibia or fibula.

The ilium contains somewhat more, and the scapula somewhat less earthy matter than the clavicle or rib.

"The great difference," concludes Dr. Rees, "observable in the proportional constitution of the adult and fœtal bones, consists in the fact, that the long bones and the bones of the head in the fœtus, do not contain the excess of earthy matter which we observe in those of the adult. Thus the humerus of the fœtus, which is the richest in earthy matter of the long bones, contains 58·08 per cent. of earths, while the ilium of the same subject is found to contain 58·5 per cent. of earthy matter. The parietal bone, which was examined as the type of the cranial bones, gave a proportion of earthy matter less than that of any bone that I have examined. The results of the analyses of the bones of the trunk in the fœtal skeleton shew that they contain animal and earthy matter in the proportions of the adult; and therefore that the difference of compactness observed between them must be the result of mechanical arrangement rather than a difference in the proportion of earthy and animal matter. There is little doubt that the general conclusion that fœtal bones are deficient in earthy material, has been derived from comparative experiments made on the long bones of the extremities, where such deficiency certainly exists. I subjoin for comparison the per centage of earthy matter contained in some of the bones of the fœtus and adult.

	Fœtus	Adult.
Rib	57·35 per cent. of earths	57·49 per cent.
Ilium	58·50	58·79
Scapula	56·60	54·51
Clavicle	56·75	57·52

From this comparison, it appears that the bones of the trunk in the fœtal skeleton are as rich in the proportion of earthy matter as those of the adult; at least the difference is too small to be material. The deficiency of earthy matter in the bones of the fœtal extremities is simply explicable on the fact that such an excess of earths as appears necessary to very great strength of bone is not needed at birth, and therefore only appears in after-life." 413.

A very interesting paper.

We turn to the pathological memoirs.

VIII. Facts and Inferences relative to the Condition of the Vital Organs and Viscera in general, as to their Nutrition in certain Chronic Diseases. By John Clendinning, M.D. Physician to the St. Marylebone Infirmary, &c.

This is an attempt to apply the numeral or statistical calculus to the phenomena of disease. Our readers must be aware that we have warmly encouraged upon all occasions the employment of this exact method in medicine. It is calculated to correct some errors, establish upon surer grounds some truths, and to put us in possession of some of those wide generalizations which become a fixed basis for special inquiries.

But we have observed that a few enthusiastic persons, in and out of the profession, have anticipated the most extravagant results from statistical calculations. They have promised us a sort of millennium. We are to learn from them how many days in the year we shall be sick, how many years in a century we shall live, what will be the duration of any given disorder, how long the convalescence will last, what quantity of chicken-broth will be requisite, and how many stools a complaint will average. In short, we have heard the utmost possible nonsense uttered, and that nonsense the more ridiculous because it was clothed in the pomposity of numbers. These statists run mad have not known, or not remembered, that the disturbing circumstances of mode of life, atmospheric, states, remedial treatment, even mental condition, are so great, that averages must be drawn from enormous numbers of individuals, and from the *very widest extremes*, to present even a semblance of truth as an *average*. The worth of this in its individual application afterwards may be guessed.

The object of Dr. Glendinning's paper is no such fool's chase. It applies itself to the solution of this question:—What are the modifications impressed on the nutritive functions in the viscera in certain chronic diseases? Does (ex. gr.) the defect of supply or excess of waste proceed in the same manner amongst the external and internal parts in phthisis? Does hypertrophy of the heart beget or indicate a general or partial tendency to hypertrophy? &c. &c.

"In answer to the questions just proposed, I proceed to offer some facts and observations. The facts I have to state consist principally of measurements by

weight of nearly all the principal viscera in most cases, and of the person in many, of 249 subjects, of whose diseases and post-mortem appearances I am in possession of memoranda, taken, with a few exceptions, by myself. They are arranged in tabular from as follows.

Table 1 contains, in separate columns, the weight of the encephalon, heart, liver, kidneys, spleen, and pancreas of each of 31 males, dead of various known diseases, not *phthisis* or *morbus cordis*, between 21 and 60 years of age.

Table 2 contains like particulars of 44 females, dead under like conditions as disease and age.

Table 3 contains like particulars of 37 males, dead, not of *phthisis* or *morbus cordis*, at ages above 60 years of age.

Table 4 contains the weights of the hearts of 33 females of various ages above 60, and dead of various diseases exclusive of *phthisis* and *morbus cordis*.

Table 5 includes particulars arranged as above, of 27 males, dead of *phthisis* between 21 and 60 years of age.

Table 6 gives like particulars of 16 females, dead under similar conditions of age and disease.

Table 7 contains particulars, tabulated as before, of each of 41 males, dead of *morbus cordis*, between 21 and 60 years of age.

Table 8 contains for 20 females, dead of the same disease, and between 21 and 60, the like particulars.

In most of those tables the weights, in more or fewer instances, are given for the person and the stomach, and of nearly all cases the diseases are recorded.

With respect to the mode of obtaining the weights it is proper to explain, that where the weight of the person is given, it comprehends the whole person, the viscera included. It was ascertained by means of a steelyard and must be accurate, although, I confess, that I often at first suspected important errors in the use of the instrument, owing to the instrumental weight differing so much, falling, in fact, so far short of the apparent weight, judging by the eye. The visceral weights are all avoirdupois, and were all ascertained by means of a balance, and are generally correct to within half a drachm. With regard to the results of weighing by the balance also I may mention, that I have often been surprised at the errors of my visual and manual estimates; errors like the former with the steelyard, generally much in defect and rarely in excess, and so difficult to avoid, that I confess I should feel little confidence in any estimate of the organized contents, or in other words, of the quantity or density of any viscus not tried by some test less fallacious than visual or manual estimate, except, of course, in case of very great and obvious excess or defect of quantity, which must necessarily be readily detected, although it could not, I believe, be measured with pretensions to accuracy without instrumental aid.

I may further mention, that before placing the viscera in the balance they were carefully separated from their appendages—the brain or encephalon and heart from their outer coverings—the liver, spleen, pancreas, kidneys, and stomach from fat, cellular substance, peritoneum, and other extrinsic parts; in fact, from all parts that were not included within the *tunica propria*, or that might in any way materially affect the result. The brain or encephalon, heart, and stomach were usually sliced, washed, &c., and the other viscera were generally similarly treated when congested or otherwise open to just suspicion."

This quotation will give an indea of the mode of investigation adopted by Dr. Clendinning, a mode which those must know who have any intention of testing his results. His tables are too long for a periodical journal. We shall present a summary of their principal contents, chiefly in the words of Dr. Clendinning himself.

1. Phthisis.[1]

If the data in question be true, we find that, in males between 21 and 60, and not labouring under consumption or disease of the heart, the average weight of the

Brain	will be	46¼ oz. or	20226 grains.
Heart		9 1/16 " or	3982 grs.
Liver		53½ " or	23408 grs.
Kidneys		9⅕ " or	4025 grs.
Spleen		5 " or	2188 grs.
Pancreas		2⅝ " or	1148 grs.
Stomach		5 " or	2188 grs.
Lungs		46 " or	20116 grs.
Person		94½ " or	661500 grs.

According to the 5th Table, the weights in phthisis are, for the

Brain	46⅕ oz. instead of	46¼
Heart	9⅙	9 1/16
Liver	58½	53½
Kidneys	10¼	9⅕
Spleen	7½	5
Pancreas	3	2⅝
Stomach	5½	5

The average weight of adult male phthisical subjects was under 94 lbs. avoirdupois, nearly 48 lbs. less than the average obtained for the healthy male of 80 years, by M. Quetelet. Thus a great disproportion obtains between the entire weight of the body, and that of the great viscera. The wasting of phthisis falls on the organs of locomotion, and on the external parts. The same holds in either sex. We see this from a comparison of the 2nd and 6th tables, containing, the former, particulars of 44 females, dead of various diseases, not phthisis or heart disease, the latter containing like particulars of 16 females dead of phthisis: the subjects of both Tables being between the ages of 21 and 60. The average weight of the whole subject, in the former female Table was 82 lbs., that of the phthisical females was 66 lbs., or more than a stone less than the former: yet, in most of the organs, the average weight was higher in the phthisical than in the other subjects.

Dr. Clendinning hangs on this pathological peg, some sanguine, we hope not fallacious anticipations.

" If fatal phthisis be, as waiving sympathetic functional disturbances, it would appear to be, essentially a local mischief; if with regard to its point of fatal attack, it be confined to the lungs, although indicating probably a constitutional propensity; if, amid all the waste of external non-vital organs and the vitiated nutrition of the pulmonary structures, the vital organs in general may, as they not unfrequently do, retain their normal structures and capacities; may we not hope that, in some future year, we shall learn to control the disintegrating processes, and correct the depraved nutrition, and heal the structural lesions, and re-establish the functional capacities of the phthisical lung, with as much certainty and facility as we already experience in the cure of several diseases formerly very fatal, but now, in a large majority of cases, remediable by our still very imperfect therapeutical resources." 44.

2. MORBUS CORDIS.

a, In diseases of the heart, there is a remarkable superiority in bulk, or density, or both, of the important organs. On comparing Table 7, that of morbus cordis in females, with Table 1, representing the standard of health for males, we find that under every head, without exception, there is an excess in the former; the brain being in the morbus cordis Table about $\frac{1}{25}$th heavier than our standard—the heart being $\frac{2}{5}$ths heavier, the liver $\frac{1}{8}$th, the kidneys $\frac{1}{4}$th, the spleen $\frac{4}{5}$ths of an ounce heavier; the pancreas $\frac{1}{5}$th of an ounce; and the stomach also heavier than the standard.

On referring to the Table 8, that of morbus cordis in females, which is deduced from thirty observations, and comparing that Table with Table 2, the standard of health for females, results will be obtained almost the same as those from the male Tables. The brain of the female dead of morbus cordis was found heavier than the standard about $\frac{1}{14}$th, the heart nearly $\frac{1}{2}$ heavier, the liver $\frac{1}{12}$th, the kidneys $\frac{1}{8}$th, the spleen about $\frac{1}{4}$, the pancreas $\frac{1}{5}$th, the stomach more than $\frac{1}{4}$th, and the person nearly $\frac{1}{8}$th heavier. So that the female table fully confirms the male, and even with enlargement, as including the stomach and person, which are deficient in the first male table, or Table 1.

These positive facts are corroborated by the general observations, that have been made cursorily by pathological observers. Dr. Clendinning remarks, that, making every allowance for the firm, heavy, non-collapsing condition of the lung, in cardiac and asthmatic disease being due simply to œdema, still he has almost always found in chronic diseases of the heart, more especially in adult males, that plethora had existed and hypertrophy taken place in the branches of the air-tube; this is more particularly true of victims of heart disease that had survived the 40th year.

"Sometimes the hypertrophy, I have observed, is accompanied by dilatation, and constitutes Laennec's emphysema of the lungs. But sometimes, also, it is unattended by any expansion, or is accompanied by contraction, so that the air passage becomes nearly or wholly impervious; and this state of the bronchial twigs or branches seems to me to have been often mistaken for tuberculation, which it not a little resembles, and to have in consequence been called grey or miliary tuberculation. Into this, as it appears to me, erroneous view of the nature of a state of the lungs which is very common, and in adult males more common, I suspect, than true caseous tuberculation, have, in my judgment, fallen many of the first pathologists, among whom I would include the illustrious Laennec." 48.

But, Dr. Clendinning thinks, and perhaps with reason, that, not only is excessive supply of arterial fluids, by an enlarged left ventricle, a cause of much visceral disturbance and vitiation; but, there is a gradual alteration of the normal susceptibilities of the viscera, owing to which they become capable, without injury, of sustaining habitual venous congestion, and at length are enabled to resume, so to speak, their fœtal conditions, so far as to assimilate indifferently venous blood or the imperfectly renovated fluid, brought back from the unhealthy lungs by the arteries.

b. Passing over some speculative reasoning, as well as some correlative observations on this subject, we proceed to another—the comparative states of nutrition, as indicated by weight, at different ages.

"If we compare Table 1 with Table 3, we shall find that, according to my observations, advanced life is accompanied by shrinking or loss of substance in the case of every organ examined, with the single exception of the heart. The brain of males above 60 years of age appears from those tables to be about 1-15th part lighter than that of adult males below 60 years of age; the liver about 1-12th lighter; the kidneys 1-6th lighter; the spleen ¼ lighter: the pancreas about ⅓d lighter; and the person generally of course, though not noticed in both tables, much diminished in bulk and weight. The heart, however, instead of diminishing with the person and the viscera, generally seems to increase, and in the instances occurring to myself as above stated, to have exceeded on the average the normal standard by about 1-12th part." 53.

Dr. Clendinning quotes some researches of Dr. Bigot's of Geneva. These confirm Dr. Clendinning's in one respect—the increase of the heart in advanced life; they oppose it in another; for Dr. Bigot maintains that the heart diminishes in phthisis. This latter observation agrees with our own. Every anatomist knows, that a phthisical heart is the best adapted for a preparation. It is wasted, thin, distensible from its flaccidity, and free from fat.

c. "I might also notice the preceding tables, Nos. 1, 2, 5, 6, 7, and 8, as illustrating the influence of sex, in modifying organic nutrition, as it appears from them, that whether in health or disease, there is in the male a greater development, arising of course from a more abundant nutrition, in the case of every organ examined, and that the excess on the side of the male, or, what is the same thing, the deficiency on the side of the female in disease of the heart, or phthisis, bears about the same proportion to the total weights of the encephalon of the other sex, that is found to exist in other diseases. This is an inference that might reasonably have been anticipated, but yet needed experimental proof. The inferior dimensions of the female person do not by any means necessarily imply corresponding visceral differences. This appears from several facts: Bigot, for example, found that the linear dimensions of the heart of 30 males of 60 French inches in height and under, exceeded those of the heart of 30 males of 60 inches in height and upwards; and he found the same rule nearly equally applicable to 18 females of 55 Paris inches stature and under, as compared with 34 females of 55 inches in height and upwards: and I have myself obtained similar results by a different method." 55.

Dr. Clendinning winds up his interesting paper with the following inferences. He does not, indeed he cannot, consider them conclusively established. But, no doubt, they approximate, more or less, to the truth.

"1. That the healthy adult male heart averages, for all ages under 60, nearly 8½ ounces avoirdupois.

Note. This estimate agrees pretty well with the estimates of Senac, viz. 8 to 10 oz; Bouillaud, 8 oz. and 3 grs. average; Cruveilhier, 7 to 8 oz. average; and Lobstein, 9 to 10 oz. average; considering that Senac and Lobstein made, as I recollect it, no distinction as to age or sex; while Bouillaud included in his estimate several hearts of subjects under 21 years of age, and Cruveilhier included subjects of various ages above 16 or 18, and of both sexes.

2. The healthy female adult heart averages nearly 7½ ounces, or, more exactly, 7 2-5ths ounces.

3. In phthisical subjects, the heart, in a large proportion of cases, (according to my observation,) weighs considerably more than in health.

4. The weight of the heart increases with years, up to the end of life, contrary to the law of nutrition of the viscera in general.

5. Hypertrophy of the heart generally, or of the left ventricle alone, predis-

poses not only to visceral and general plethora and hypertrophy, but also to acute and chronic inflammations in general, and especially to the bronchitis, pneumonia, and pleurisy,—and the tendency it produces to disease of the bronchial ramifications in particular, and of the air vesicles, is such that cases of long standing are usually, if not invariably complicated with chronic catarrh and emphysema of the lungs.

6. The average weight of the brain of the healthy adult male under 60 years of age is about 45·85 ounces: that of the healthy adult female under 60 about 41·25 ounces.

(*Note.* This is rather lower than the estimate of Dr. Sims contained in his valuable paper in the 19th volume of the Transactions, which, for both sexes and all diseases from 20 to 60 years of age gives an average of about 45 ounces. But the estimate of Dr. Sims being founded on more than 100 observations of subjects between 20 and 60, is, in all probability, better entitled to confidence than mine, although taking no account of other difference than that of age.)

7. The weight and consequently nutrition of all the viscera exceed the normal standard in all cases of phthisis, in which the heart is increased in bulk or weight.

8. That in post-mortem inspections, more especially of cases of diseased heart, but also in other cases of which hypertrophy of any viscus might be supposed an element or complication, it is advisable, in addition to manual and visual examination and linear measurement, to employ other means, such as weighing, to ascertain accurately the state of nutrition and density to the viscera, and perhaps of the person, in order to avoid the risk of overlooking important deviations from the normal condition, not otherwise so readily and surely to be detected." 57.

IX. On Increased Thickness of the Parietes of One of the Ventricles of the Heart, with Diminution of its cavity. By George Budd, M.B. F.R.S. Fellow of Caius College, Cambridge, and Physician to the Seamens' Hospital, Dreadnought.

M. Bertin, in 1811, applied the term "Concentric Hypertrophy" to unnatural thickness of the parieties of one of the ventricles of the heart, with diminution of its capacity. By this term the condition in question has since been generally known, and it has been as generally considered a pathological state.

But M. Cruveilhier has lately taken a very different view of it. He says:—

"The facts which I have had occasion to observe, do not allow me to admit concentric hypertrophy. The obliteration of the cavity, and the proportionably increased thickness of the parietes, appear to me the result of the mode of death. The hearts of all those whom I have had an opportunity of examining, who died by the executioner, have presented this double phenomenon in the highest degree; the parietes of the ventricle were in contact at all points. I have made the same observation with regard to other persons who died a violent death. The hearts concentrically hypertrophied, of the authors I have just quoted (MM. Bertin and Bouillaud,) appear to me to be hearts, more or less hypertrophied, which death surprised in all their energy of contractility."*

* Dictionnaire de Méd. et de Chir. pratiques. Art. Hypertrophie.

To determine, so far as he can, which opinion is correct, has been the object of Dr. Budd's inquiries and of the present Paper. He refers to a considerable number of cases, some of which occurred to himself, while the great majority have been recorded by various authors.

1. The first eight cases are related somewhat in detail. It does not appear necessary to quote them, as the following brief summary of their leading features will present a sufficient account of them.

"Here then," says Dr. Budd, "we have eight cases, in which the appearances of concentric hypertrophy existed without complication of any considerable disease of the valves. In one of these only was any irregularity of the pulse noticed; in none was there dropsy; and in none, if we except Dr. Johnstone's case, in which there was a questionable dilatation of the right auricle, was there any dilatation of the right cavities. From this we may infer that the affection of the heart, in these cases, offered no considerable obstacle to the circulation through it. For when much obstacle exists, at least on the left side of the heart, there is generally intermittence or irregularity of the pulse, and almost invariably dilatation of the right cavities and dropsy." 305.

"By the absence, then, of these three conditions in the cases of concentric hypertrophy, we are justified in concluding that this affection, in the cases in which it has been observed uncomplicated with an obstruction at the valves, offered no obstacle to the circulation through the heart.

But how can we reconcile this with the smallness of the cavity in these cases? It is impossible to conceive that a left ventricle, which could scarcely hold an almond, should offer no obstacle to the circulation through the heart. Yet in this very case, the day before death, the pulse was quite natural in frequency, development, and rhythm, and we have the word of the accurate Laennec, that there was no symptom of disease of the heart.

In another very marked case, the pulse was noted as tolerably full and soft. None of these patients died of disease of the heart; and in all, the symptoms which could have led one to suspect cardiac disease were slight, and no other than those which indicate simple hypertrophy." 306.

Dr. Budd concludes that, in the cases related, they were hearts, more or less hypertrophied, which, to use the expression of Cruveilhier, death surprised in a state of contraction. Dr. Budd goes on to remark, that:—

Another inference from the preceding cases is, that enormous hypertrophy, unaccompanied by dilatation or by disease of the valves, does not produce any of the symptoms characteristic of an obstacle to the circulation through the heart. The true causes of these symptoms, when they exist in the heart, appear to be—

1. An increase in the volume of a cavity, relatively to the area of its discharging orifice, which renders necessary, as is evident from mechanical considerations, the exertion of greater force by the parietes to propel an equal quantity of blood with the same velocity.

2. Any obstruction from thickening or insufficiency of a valve.

3. A want of power in the parietes of a ventricle to empty the cavity, from deficiency of energy, as in cases of chlorosis, &c.

A further analysis of the cases seems to indicate some circumstances favourable to the appearance of concentric hypertrophy.

1. *Age.*—Six of the eight cases occurred in persons who had passed the meridian of life; four in persons who had reached the age of sixty or more; and, with one exception, the most marked cases occurred in the oldest persons. It is probable that the influence of age depends on its being

favourable to hypertrophy. We may refer, upon this subject, to the researches of M. Bizot, and we may refer also to the paper of Dr. Clendinning, which we have just analysed.

2. *Diseased Arteries.*—In six of these cases, there were considerable incrustations of the lining membrane of the arteries. This condition, by the resistance from friction which it offers to the course of the blood, is also a cause of hypertrophy.

4. *Emaciation.*—The subjects of four of the eight cases were noticed as being thin. The smallness of the quantity of blood may reasonably be supposed to have had some influence in producing the appearance in question. Dr. Budd observes that this supposition is countenanced by the frequency of "concentric hypertrophy" in the bodies of those who die of cholera.

5. *Mode of Death.*—In four at least of these cases death occurred from apoplexy.

II. Dr. Budd next proceeds to consider six cases, and to glance incidentally at several others in which the concentric hypertrophy was accompanied by considerable valvular diseases. The analysis is not a lengthened one, yet we must refer the reader who would examine it, to the paper itself. The following conclusions are all that we can quote.

"If we compare the cases in which the affection was unaccompanied by considerable obstacle from disease of the valves, with those in which such obstacle existed, we shall find that, in the first, there was no dropsy, no very evident signs of disease of the heart, and that neither of the patients died of a cardiac affection; that, of the others, there was dropsy in five cases; evident signs of the disease of the heart in all; and the disease of the heart the immediate cause of death in all. Now, the appearances of concentric hypertrophy were not more manifest in the second series than in the first.

If, then, the concentric hypertrophy observed in the second series was identical with that in the first, which it is fair to conclude for most of these cases, we must infer that the symptoms of disease of the heart, in the cases of the second series, did not result from the concentric hypertrophy, but from the valvular diseases that accompanied it, and which was of itself, too, sufficient to account for such symptoms."* 312.

III. A remaining group of cases is to be disposed of—cases in which concentric hypertrophy was observed in conjunction with congenital malformation of the heart.

Dr. Budd relates five cases of concentric hypertrophy connected with congenital malformation. To use the summary of them given us by Dr. Budd, in all there was a congenital obstruction at the pulmonary orifice, and in most of them there was, certainly, concentric hypertrophy of the right ventricle. In the last of these cases, the circumstances of the child's dying at the age of thirteen days, proves that in it the concentric hypertrophy was also congenital; and as most of the other cases presented charac-

* "It is from not having distinguished the cases in which it occurs in conjunction with diseased valves that some physicians have considered pericarditis as a cause of hypertrophy."

ters similar, and differing only in degree, and as in all, there was a malformation, evidently congenital, causing obstruction at the pulmonary orifice, we must, in Dr. Budd's opinion, conclude that, in these cases, the concentric hypertrophy was also congenital. He considers it proved that concentric hypertrophy of one of the ventricles of the heart, with obstruction at its discharging orifice, may exist as a congenital malformation, and that, in cases in which there is an extraordinary passage for the blood, through the foramen ovale of the ductus arteriosus, or by the communication between the ventricles, the natural thickness of the parietes may be increased five or six times, or even more; and that, generally the right is the ventricle so affected.

The right auricle was greatly dilated in all the cases but one. All the patients, with one exception, died young. In the former categories, the affection was most frequently on the left side, and the patients were generally advanced in life. The paper terminates with the following recapitulation:—

"1. That similar appearances have been observed by M. Cruveilhier in the hearts of persons who died by guillotine; and, by Mr. Jackson and others, in subjects whose death had been caused by cholera.

2. That in these cases the symptoms of cardiac disease were slight, and no other than those which indicate simple hypertrophy; and that there was no intermittence or irregularity of the pulse, no dilatation of the right cavities or dropsy; symptoms of obstacle to the circulation through the heart, which must have occurred had the cavity during life been so small as it appeared to be.

3. That, in two of the cases, the cavity was restored, by mechanical means, to its normal size; and that in none was there any obstacle behind it, by which its permanent diminution could be explained.

4. That the supposition of increased strength of the parietes with diminution of the cavity, and that, too, relatively to the area of its discharging orifice, is opposed by the mechanical considerations by which we account for the almost constant occurrence of hypertrophy in cases of dilatation.

II. In the six cases complicated by extensive valvular disease, the diminution of the cavity cannot be explained by the hypothesis of an obstacle behind it; and, in some of these cases, the existence of an obstacle before it renders it highly probable that this diminution was merely a passing condition of the ventricle: and, as the appearances of concentric hypertrophy were not more marked in these cases than in those of the former category, and as the symptoms of obstacle to the circulation, observed in these cases, were such as would result from the diseased valves alone, we cannot admit the existence of concentric hypertrophy in the category we are now considering.

III. Concentric hypertrophy of a ventricle, in a high degree, with obstruction at its discharging orifice, and an extraordinary passage for the blood, occasionally exists as a congenital malformation, and, in most cases, the right is the ventricle so affected.

IV. Hypertrophy of the heart, to whatever extent it exists, when it is exempt from dilatation of the cavities, and from disease of the valves, does not produce any of the symptoms of an obstacle to the circulation through the heart." 317.

Perhaps it may admit of doubt whether the second and the fourth propositions are satisfactorily established. Dr. Budd will, we think, admit that additional evidence and further investigations are desirable. But his paper will undoubtedly tend to disabuse the minds of medical men, of the vague ideas or the positive errors which occupied them on the subject of concentric

hypertrophy. Dr. Budd has contributed some valuable observations to this volume of the Society's Transactions. He is a young physician of energy and promise.

The only remaining paper that we can notice is one by Mr. Thurnam, formerly apothecary to the Westminster Hospital. Those who have the pleasure of his acquaintance are aware of his industry and intelligence, and the paper we are about to examine is characteristic of both.

X. ON ANEURYSMS OF THE HEART; WITH CASES. By JOHN THURNAM.

Partial dilatation, or aneurysm of the heart, attracted comparatively little attention, till 1827, when the occurrence of several cases, nearly simultaneously, at Paris, gave rise to an important memoir from the pen of M. Breschet. That memoir contained the history of ten cases, and the inferences that appeared to be reasonably deduced from them. But other cases and more correct conclusions have, subsequently, been obtained, and the object of Mr. Thurnam is to present an account of what the existing amount of facts is capable of telling us.

"My attention," he says, "was first strongly directed to this disease, by the occurrence of a remarkable case of it in the Westminster Hospital, which will be the first narrated in this paper. I have since visited the different museums of this metropolis, and that at Fort Pitt, Chatham, and have thus had an opportunity of inspecting, at the least, twenty-five specimens of the lesion in a more or less advanced stage. Of these cases, I found that the greater proportion had not been published at all, and that many of the remainder had only been very imperfectly described in catalogues. Of the appearances of the disease in all these cases I have taken notes, and have endeavoured to obtain as much information respecting their history as possible; and in some instances, have succeeded in obtaining tolerably complete cases, which have been very obligingly confided to my disposal. The new cases with which I have in this way become acquainted are thirteen in number, and of these, eight I have detailed at length; of the others, the accounts are too defective for this purpose, but such particulars as I have been able to collect respecting them, as well as of others before described, I have availed myself of, and have arranged in an appendix to this paper, which contains every case of the affection, with which I am acquainted. The materials thus collected are very considerable, amounting altogether to 84 cases, of which 58 are in the left ventricle. With such a number of facts before us, I cannot but conclude that a history of this disease may be formed, more complete than any we have hitherto possessed." 189.

Aneurysms of the heart, though most frequent in the left ventricle, have occurred in the left auricle, and, in a few rare instances in the valves of the heart themselves. Mr. Thurnam treats of them in each of these three situations.

a. ANEURYSM OF THE VENTRICLES.

So far as is known, the right ventricle is totally exempt from aneurysm. Putting aside the hypothetical explanations of the facts that have been offered and some remarks of Mr. Thurnam's on the right and left hearts, we must mention the sense in which he employs the term *aneurysm*, in order that no misconception may exist with regard to his meaning. He understands by it:—

An abnormal dilatation of a portion of the vascular system of red blood, either dependent upon, or necessarily connected with a morbid change in the tissues forming the walls of the dilated part.

This definition will of course exclude not only all forms of dilatation of the right cavities of the heart and of the pulmonary artery, but also all general dilatations of the left cavities of the heart; different forms of which, either combined or uncombined with hypertrophy, have since the days of Baillie and Lancisi been generally known under the name of aneurysm. Mr. Thurnam points out the objections to the application of the term aneurysm to general dilatations of a cardiac cavity with or without hypertrophy—an application too generally made with the effect of producing inconvenience and confusion.

a. Aneurysm of the Left Ventricle. Mr. Thurnam relates, more or less circumstantially, the particulars of seven cases, and refers in an Appendix to fifty-one others. These details are two extensive for a Journal, and we must refer our readers to the Paper itself, if they are anxious to become acquainted with them. A summary of twenty-nine pages will enable us to obtain all the leading particulars, and the great generalizations. We shall condense, where condensation would be prudent, the analysis of Mr. Thurnam. Its numerical and statistical character renders compression almost impossible.

Lateral aneurysm, he says, of the left ventricle is met with under two principal forms. Thus it may be either unattended by any external deformity of the heart, and confined altogether to the ventricular walls; or it may present itself in the form of a tumor growing from the exterior of the organ, and in size varying from that of a nut to that of the heart itself. In sixty-seven aneurysms occurring in the fifty-eight cases, thirty-five were attended by tumor; in nineteen there was no tumor; and in the remaining thirteen, it is doubtful whether tumor existed or not; although, from the small size of the sacs in these latter cases, it is probable that the disease scarcely extended beyond the surface of the ventricle. There can scarcely be a doubt that, in its earlier stages at least, this lesion is far from unfrequent; and it may be observed, that it is in these stages that anatomical examination will be likely to throw light upon the mode of its formation.

b. The size of the sac varied from that of a nut to that of almost the healthy heart itself. In one case it had nearly projected externally. When the disease has been of some standing, and the sac has attained a certain size, it usually opens into the ventricle by a mouth, the diameter of which is narrow, relatively to that of the sac itself; and the lips of which, like those of old arterial aneurysms, are generally projecting, well-defined, and formed of a dense fibrous tissue.

"With respect to the tissues of the heart engaged in the formation of the aneurysmal sac, a careful analysis of the cases would seem to shew, that in fifteen, the sacs were formed by the muscular fibres and pericardium; in four, by the endocardium and pericardium only; in twenty-five, by all of the structures entering into the composition of the walls of the heart; whilst in twenty-three cases, the disease was either too far advanced, or the data are insufficient to enable us to assign them to their proper places. The aneurysmal sacs had in some cases undergone changes and transformations of different kinds; thus in two cases, they are stated to have assumed a steatomatous structure; in three, a cartilaginous one; which latter change, in six others, was combined with a more or less advanced calcareous or osseous degeneration." 219.

d. In twenty-one cases, and probably in a still greater number, the sac had become strengthened by adhesion to the loose or fibrous layer of the pericardium; and in all these instances, the disease had advanced to the extent of producing tumor on the external surface of the heart. A very small tumor would appear adequate to the production of such adhesion. In a few cases there were only opacity and thickening, or shaggy false membranes on the surface of the sac.

e. "In six cases, in none of which had adhesion taken place between the aneurysmal portion of the heart and the pericardium, and in which the aneurysm scarcely, if at all, projected beyond the surface of the ventricle, a rupture of the sac had occurred, which had led to a fatal extravasation of blood, into the pericardium. In one case only, related by Sir Astley Cooper, does rupture appear to have occurred when there was the adhesion alluded to, and in this instance the left pleura was the seat of the hæmorrhage. In another instance, the tendinous centre of the diaphragm was adherent to the greater part of the sac, which was very large, and had a small supplementary pouch, with very thin walls engrafted upon it; and had this become the seat of a rupture, it must have led to extravasation into the peritoneum." 220.

f. In twenty-three cases, the sacs, chiefly those with constricted mouths, and of considerable size, contained a greater or less quantity of laminated coagula; seventeen, either apparently of less standing, or situated more in the direct channel of the blood, contained simple amorphous coagula; whilst nineteen appear to have been found empty after death; one contained a hollow globular coagulum; two, simple but ancient fibrinous ones.

g. No part of the ventricle is exempt from aneurysm, but the apex is its most frequent seat. Thus the sixty-seven aneurysms which occurred in the fifty-eight cases, omitting one case in which this is not mentioned, may, as regards situation, be thus distributed; at or near the apex of the ventricle, twenty-seven; in different points of the base, twenty-one; in intermediate portions of the lateral walls, fifteen; in the interventricular septum, three. In short, setting aside more minute considerations, the thinnest parts of the walls of the left ventricle, or the apex and the highest part of the base, are those which are much more frequently than any others the seat of the disease.

h. In general, or in fifty-two out of the fifty-eight cases, only one aneurysm existed in each; but in four cases two were met with in each; in one there were three; and in another four incipient aneurysms. In two instances, it is not improbable that two sacs which were originally distinct had coalesced, so as to form a single aneurysm; and in another case, three sacs appear to have united in this way.

i. "An important point in the history of lateral aneurysm of the heart, is that which relates to the other lesions of this organ, which are found to accompany it. To begin with the pericardium: in addition to the twenty cases already alluded to, in which there was adhesion to the surface of the aneurysmal tumor, we find that, in seven cases, there was general adhesion of this membrane to the surface of the heart; that in one, there was recent hæmorrhagic pericarditis; and that in three, there was dropsy of this cavity. In twelve cases, the endocardium is stated to have undergone different changes of structure; so as to have become either white, opaqe, or thickened in the immediate neighbourhood of the sacs, or even more extensively; and in one case, there was a minute deposit

of calcareous matter either in or beneath this membrane. The muscular substance of the ventricle was, in at the least nine cases, the seat of more or less extensive fibro-cellular degeneration, which was generally most marked around the sacs; in one case, there was a cartilaginous transformation; and in another, induration from a non-specified cause. In one instance, the walls of the ventricles are said to have been the seat of 'lardaceous tumours,' and in another, of extensively diffused suppuration. In numerous cases, there was a marked atrophy either of the fleshy columns which form the pillars of the mitral valve, or of the smaller ones, which constitute the net-work on the internal surface of the ventricle. The valves of the left cavities are stated to have been diseased in ten cases; in five of these the mitral valve was the seat of the lesion, and was constricted by cartilaginous or osseous deposit; in three, the aortic valves were diseased, and both these sets of valves were implicated in one example. In eight cases, the valves are reported to have been healthy; whilst, in the remainder, their condition is not mentioned." 224.

The majority of the changes are inflammatory, or allied to inflammation. From their variety, it appears that aneurysm of the heart cannot be regarded as exclusively dependent upon pathological changes in one only of the tissues entering into the composition of this organ.

k. In the fifty-seven cases of aneurysm, there are reported to have been general dilatation of the organ in three instances; dilatation with hypertrophy of all the cavities in three; dilatation with hypertrophy of the left ventricle in nine; simple dilatation of the left ventricle in four; and simple hypertrophy of the same cavity in two other cases.

The number of cases in which the heart is not stated to have been the subject of some lesion in addition to the aneurysm, does not exceed ten; and in three only is it positively stated to have been otherwise healthy.

Causes of the Disease.

a. Sex.—Of forty cases, in which this is recorded, thirty occurred in male and ten in females.

b. Age.—The age of the patient is either stated or to be inferred with tolerable accuracy in thirty-five cases. The youngest patient appears to have been eighteen, and the oldest eighty-one years of age; and the whole of the cases may be arranged in decennial periods as follow:—

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d. Under the head of predisposing causes may be ranked intemperate habits in four cases, and rheumatic disease of the heart in two. Yet in other cases (*some* of six) the presence of universal adhesions of the pericardium renders it probable that rheumatism had existed. And this *may* explain the comparative frequency of the complaint in early life, a frequency not seen in other aneurysmal disorders.

The exciting cause of the disease would appear to have been external violence in the form of an injury of the chest in the case of the gondolier, a fit of violent anger in that of the nobleman, protracted mental anxiety in another instance, severe efforts on the stage in the character of Halmet, in the case of Talma, and in a fifth instance, the retention of the breath during a military flogging.

Pathological Summary.

"From an examination then, of the anatomical details, as well as of the apparent causes of the disease, in reference to the determining of its nature; I come to the conclusion, that in twenty-two cases out of the fifty-eight, the aneurysm originated in a dilatation of all the structures entering into the composition of the walls of the heart; and in six in a solution of continuity of the lining membrane and in a stratum of muscular fibres, either as a consequence of ulceration, or, what is more probable, of rupture; whilst in the remaining thirty cases the disease was either too far advanced or the data given are insufficient to enable us to form a satisfactory opinion on this question.

I therefore conclude that this lesion, in by far the greater proportion of cases, is of the nature of *true aneurysm*; or that it has its origin in the dilatation of a portion of the walls of the heart, which has become less able to resist the distending force of the blood, during the ventricular systole, in consequence of organic changes in the tissues composing it. These changes may be confined to one of these tissues, as the endocardium; or they may involve that membrane and the muscular structure simultaneously; or, lastly, they may, I believe, originate in the pericardium, and be propagated from without inwards. In a great majority of instances, these changes would appear to have been the result of a more or less active antecedent inflammation.

I have, on one or two occasions, noticed an appearance on the internal surface of the left ventricle, which appears to me to have been the earliest stage of those pathological changes which terminate in the formation of true aneurysm. This consists in a more or less decided enlargement of one of the natural interspaces or depressions between the smaller fleshy columns. In one case which I have had a recent opportunity of examining, I met with a small cavity in the centre of this interventricular septum, which was capable of containing a small horse-bean. This cavity was evidently an enlargement of one of the natural sulci, which have been alluded to; it was traversed by the lining membrane of the heart, which in this particular spot was white and opaque, and it was only separated from the cavity of the right ventricle by a very thin stratum of muscular fibres, of a whitish appearance and dense fibrous texture.

Granting that the condition which has been now described, would, under certain circumstances, have led to the production of an aneurysm of the heart; or, in other words, that it constituted an aneurysm in its earliest stage, the observation must be regarded as important, and as fully confirming the view which has been advocated of the more usual mode of formation of true cardiac aneurysm." 230.

a. But *false aneurysm*, that is, aneurysm originating not in a partial dilatation, but in a partial rupture of the heart's parietes may, undoubtedly, take place also. Mr. Thurnam observes that, the examination of some cases and preparations would lead us to conclude that rupture of the heart, even

when ultimately fatal, has not always been of momentary occurrence, but, on the contrary, has taken place very gradually, having commenced in the internal stratum of fibres, and only slowly spread to the external.

Mr. Thurnam does not deny the possibility of false aneurysm of the heart originating in ulceration, and in the discharge of the contents of abscesses and cysts into the cavity of the ventricle; but he is not satisfied of this having been the mode of production in any case with which he is acquainted.

b. External mixed aneurysm, or the supervention of a false upon a true aneurysm, does not occur in the pericardial portion of the aorta, in consequence of the absence of a distensible cellular coat to this portion of the artery, and hence lateral aneurysm in this situation usually proves fatal from rupture at an early period. For the same reason, mixed aneurysm does not occur in the heart; but as we have already seen, the aneurysmal sac usually soon gains an adhesion to the pericardium, by which means rupture is, in most cases, prevented.

c. True aneurysm, or that by dilatation, may either involve a limited point only, or the whole circumference of an artery; and in the latter case it constitutes a disease which has been variously named, 'preternatural dilatation,' 'cylindrical or fusiform aneurysm,' 'diffused true aneurysm,' and 'arteriectasy.' I am, I believe, the first to contend for the existence of an analogous form of aneurysmal dilatation in the heart; for, as I have observed when speaking particularly of the fourth case in this paper, the lesion in that instance would appear to merit the name of 'diffused true aneurysm of the heart.' Dr. Carswell and M. Cruveilhier have indeed each alluded to a case of extensively diffused true aneurysm of the heart, and the former has given a drawing of the disease, but in neither of these cases had the dilatation involved the entire circumference of the ventricle." 233.

d. It appears not improper, continues Mr. Thurnam, to designate by the name of *dissecting aneurysm of the heart*, that form of the disease, in which an aneurysm, as in Dr. Hope's cases, forms a canal under the lining membrane of the ventricle, which opens at some other point.

e. When the sac is formed solely by endocardium and pericardium, the case has been compared with that rare form of arterial aneurysm, in which the lining membrane of the vessel protrudes through a rupture in the middle tunic, constituting a lesion, which has been sometimes designated "aneurysma herniosum," and sometimes "internal mixed aneurysm."

f. In the case of an aneurysm seated in the interventricular septum becoming ruptured, so as to form a communication with a portion of the venous system,—the right ventricle—we should have a lesion produced altogether analogous to that which results from the wound of an artery and its accompanying vein, and to which the name of *spontaneous varicose aneurysm of the heart*, is perfectly applicable. Two of the cases detailed may *possibly* have been of such a character.

It must be owned that the two last analogies, though ingenious, are far-fetched, and it may admit of question whether this pathological transcendentalism is really beneficial. But it is curious if not instructive. Mr. Thurnam terminates the summary by the remark:—

"We are then, I think, justified in asserting that, we find in the heart, with the exception of 'the external mixed aneurysm,' for the non-occurrence of which there is an anatomical cause, all the varieties of the disease which are met with

in the arteries themselves; and that we cannot recognize the simple increase in the capacity of the cavities of this organ as constituting a lesion that ought to be spoken of as aneurysm." 235.

Symptomatology and Diagnosis. The existing information upon these heads is neither extensive nor precise. Probably, in its incipient state, aneurysm of the heart is not attended with any derangement of consequence in the functions of the organ. In two cases of the disease in an early stage, the absence of symptoms referrible to the heart is expressly stated.

a. "The mode of incursion of the disease differs remarkably in two classes of cases. Thus in three instances the attack was sudden, and attended with marked symptoms, analogous to those observed in cases of rupture of the heart, when this is not directly fatal; either in consequence of the rupture being incomplete, or from the opening being so small as to allow only of a very gradual effusion of blood into the pericardium. The most instructive of these cases is that of the nobleman, related by Galeati; who, after a violent fit of anger, was suddenly seized with severe præcordial pain, orthopnœa, agitation, fear of death, a disposition to syncope, and a vibratory, frequent but languid pulse." 235.

Probably, in such cases, the disease is of the nature of false aneurysm from rupture.

b. In the great majority of cases, however, the disease would seem to have had a very insidious origin, and to have been only very gradually announced by symptoms. Possibly these may be instances of true aneurysm.

c. In five cases, the symptoms of the disease are described generally as those of 'diseased heart.' In twenty-three cases in which the symptoms are given in detail, these taken in the order of their frequency, were as follow; dyspnœa, in several instances amounting to the severest form of orthopnœa, in fifteen cases; præcordial pain of different characters in one or two cases amounting merely to uneasiness, but in several others accompanied by a sense of weight, in fourteen; dropsy more or less extensive, in ten cases; palpitation in nine cases; anxiety, dread of death, or restlessness, in eight; and syncope, or a disposition to it, in three cases.

In addition to these symptoms others are also more rarely mentioned; such as cough, throbbing of the carotid arteries, pulsation of the jugular veins, livid or blue countenance, and hæmorrhage from the nose and lungs. The condition of the pulse is noted only in a few of the cases, and in seven of these it is stated to have been feeble, sometimes in an extreme degree.

d. In fourteen cases, there are notices of the duration of the symptoms. In one case, the patient died in ten days from the development of the lesion; in the other cases the duration of the disease ranged from three or four months to fifteen years.

e. "In twenty-four cases, the mode of death is stated. In twelve of these in which it was very sudden, it arose, in three from syncope; in one from an unknown cause; and in eight from internal hæmorhage. In six of these eight cases, the hæmorrhage was dependent upon a rupture of the aneurysmal sac into the pericardium; in one, upon a rupture of the sac into the left pleura; and in another upon a rupture of the substance of the ventricle itself, in the immediate neighbourhood of the sac. In four cases the patients appear to have died from an apoplectic or paralytic affection, and in one from epistaxis. In three cases the mode of death was the more ordinary one in heart affections, or that by apnœa (asphyxia,) and this, though not positively stated, was pro-

bably also the case in six other instances. In the following cases, six in number, as well as in the four apoplectic cases, death was evidently the result of complication with other diseases." 238.

f. Aneurysm of the heart being generally complicated with other lesions of the organ, the detection of pathognomic symptoms has been difficult, indeed impossible. The symptoms which have been observed may be broadly referred to such as would ensue from retardation of blood in the cavities of the organ, and consequent obstruction to the venous circulation—and to a variety of distressing sensations in the præcordial region, sensations also met with in angina pectoris and valvular disease. Mr. Thurnam indulges in some ingenious observations on these points.

g. The physical signs have either been imperfect, or imperfectly observed —in all probability, both. In three cases, the impulse of the left ventricle is stated to have been increased; in one, the action of the heart generally was forcible and tumultuous; and in two others, feeble and obscure. In four cases, a bellows or rasping sound was heard with the ventricular systole; and in a fifth case, a similar sound was heard to the left of the sternum. In one case, the character of the first sound was short, like that of the second.

Mr. Thurnam presents a letter from an able auscultator, Dr. C. I. B. Williams. It contains what we may term suggestions for a diagnosis, that is, a statement of what the signs would probably be. Dr. Williams confesses himself unable to speak from experience. We think it unnecessary to pursue the subject of diagnosis, enveloped as it is in doubt and obscurity. Practically it is of little consequence, for if there be any symptoms of cardiac disease at all, the general and particular treatment would be much the same as if we knew there was an aneurysm.

Prognosis. It would be unnecessary to dwell upon its *badness.*

Treatment. And it would be equally futile to discuss this.

b. Aneurysm of the Auricles.

a. Mr. Thurnam has collected the particulars of eleven cases of aneurysm of the left auricle. The disease would appear to have been nearly uniformly of the diffused kind, and to have generally involved the entire sinus of the auricle.

b. The dilated walls of the cavity are often thickened, and the seat of fibro-cellular degeneration. The lining membrane is opaque, rough, and otherwise diseased, and in some cases even ossified, and is lined with fibrinous layers, very similar to those met with in arterial aneurysms. In all these cases, the lining membrane appears to have been continued into the interior of the dilated portion, which consequently merits the name of true aneurysm. Occasionally, the dilatation is confined to the auricular appendage, which becomes excessively distended with lamellated concretions.

In all the cases of this kind with which Mr. Thurnam is acquainted (they are nine), there was an extreme contraction of the mitral orifice, producing difficult transmission of the blood from the left auricle. We have seen several cases of this kind. But in those the affection of the auricle was of

the character of hypertrophy and dilatation, with or without inflammatory alterations of its internal membrane.

c. "In one case only with which I am acquainted, was the aneurysm of that circumscribed kind to which the term *lateral* or *sacculated* could he applied. In this case, there was a sac as big as a nut hanging over the base of the left ventricle, and containing dense fibrinous concretions and liquid blood, which communicated with the cavity of the auricle by a canaliculated pedicle an inch in length.

The case related by Penada, which has been cited by Dezeimeris and Ollivier as one of aneurysm of the left auricle, was, I incline to think, after an examination of it and of the accompanying engraving, merely an instance of ulceration." 246.

d. But Mr. Thurnam goes on to remark, after relating the particulars of a case of Mr. Langstaff's, it is not in cases of contracted mitral orifice alone, that the left auricle may become the seat of aneurysmal dilatation. A case communicated to Dionis is conclusive upon this point.

Case.—A soldier who had deserted, whilst in fear of pursuit, struck the left side of his chest forcibly against a tree, by which he was thrown from his horse. From this time he became the subject of severe pain, palpitation, and dyspnœa; and a large pulsating tumor gradually formed to the left of the sternum, which at last extended from the clavicle to the fifth rib. He died about a year after the accident. In addition to ununited fracture of the first four true ribs, empyema and abscesses in the lungs; the left auricle of the heart was found of immense size, giving rise to the external tumor. The pleura, or probably rather the pericardium, adhered closely to the enlarged auricle, the walls of which were an inch thick, of a dense cartilaginous structure internally, and full of grumous blood. The aorta, venæ cavæ, and pulmonary artery, and veins were healthy.

e. Mr. Thurnam refers to two or three cases, in which the right auricle was the seat of a lesion analogous to aneurysm of the left.

The most remarkable, he observes, of these appears to be the case of the captain of a vessel, also related by Dionis, who, after making powerful efforts to restrain a fit of violent anger, experienced dyspnœa and severe palpitations, with a pricking sensation about the heart. He died twelve years after the commencement of these symptoms, having previously suffered from anasarca, cold extremities, a great disposition to sleep, and his death having been preceded by profuse epistaxis. The right auricle was found enlarged to the size of the head of a newly-born infant, and contained a pint and a half of semi-coagulated blood. The dilated auricle was lined with a scaly osseous substance, like egg-shell, which kept it stretched. The pericardium was firmly adherent. Dionis attributes this immense dilatation to the distention and partial rupture of fibres, which occurred in consequence of the sudden ingress of blood into the auricle, during the violent fit of rage.

Nothing is to be said on the symptoms or the treatment of these affections.

c. ANEURYSM OF THE VALVES OF THE HEART.

"The valves of the heart, themselves as was previously observed are sometimes the seat of dilatations, which may properly enough be styled aneurysm. Morand

and Laennec have each published a case of this partial dilatation occurring in the mitral valve, in the form of a little pouch which projected into the left auricle. In both these cases, the aortic valves were the seat of extensive ossification, so that great obstruction to the passage of the blood into the aorta must have existed. Indeed, I think it not improbable that this circumstance determined the dilatations, which possibly occured in the valves rather than in any other part of the walls of the ventricle, in consequence of their being weaker than usual, either from congenital or acquired defect." 251.

In a preparation at St. Thomas's Hospital, taken from a case of Mr. Posthlewaite's, of Chichester, the sac is seated in the large or right portion of the valve, and encroaches considerably upon the septum of the auricles, which is, as it were, pulled down, so as to form part of the sac; a circumstance which probably depended upon the tendinous ring, to which the margin of the mitral valve is attached, having likewise given way.

The sac would contain a large walnut, and in the substance of the interauricular septum directly above it there is a distinct ecchymosis. The only aortic valve which remains in the preparation appears perfectly healthy.

The next case related by our author is one of aneurysmal dilatation of the tricuspid valve. The preparation is in the Royal College of Surgeons, in whose musuem it was deposited by Mr. Lawrence Healy. The patient was a "blue boy."

The last case related is one of aneurysmal dilatation of one of the two aortic valves, the third being congenitally absent.

We have not space for the particulars of these cases, and we must bring this article to a conclusion, by presenting the terminal remarks of Mr. Thurnam on the subject.

"I shall only add," he says, "to this paper, a very few observations on the history of aneurysm of the valves of the heart, in addition to those which are appended to the particular cases. I should be inclined to believe that, generally speaking, aneurysms of the valves of the heart originate in a progressively advancing dilatation, unpreceded by rupture or ulceration, and that in fact they are true aneurysms.

It is, however, possible that the aneurysmal dilatation may have been preceded in some cases by the destruction of one of the laminæ of the endocardium forming the valve affected; and in such instances the lesion must of course be regarded as a false aneurysm.

The constantly recurring movements to which these portions of the heart's structure are subject, are obviously unfavourable to the formation of coagula in aneurysmal pouches in these situations; and indeed it does not appear that such coagula had formed in any of the cases.

It is perhaps scarcely necessary to point out that a lesion of this description must necessarily act in a more or less decided manner, as an obstruction to the flow of the blood out of the cavity immediately behind the valve which is the seat of such lesion; and that if the aneurysmal sac be perforated, either as the result of ulceration or rupture, a regurgitation of blood will be permitted from the cavity in front of the diseased valve. It will hence follow that the diagnosis of aneurysm of the valves will, for practical purposes, resolve itself into that of obstructive and regurgitant valvular disease; upon which any observations of mine would be superfluous after the information we have respecting it, in the different standard works upon diseases of the heart in general, and especially in hose of Drs. Hope and Williams." 262.

It is unnecessary to say more in reference to this paper, than that it reflects the highest credit on its author.

We have now analysed, more or less copiously, all the Papers in the present volume of Transactions, with the exception of one by Dr. William Thomson, on Black Expectoration and the Deposition of Black Matters in the Lungs. This appears to be scarcely adapted for our pages, being, in a great measure, of a critical character. We noticed a former Part of this Paper, and as we are promised a future and concluding one, we shall reserve what we have to say until that makes its appearance.

REPORT OF THE MALIGNANT FEVER, CALLED THE "PALI PLAGUE," WHICH HAS PREVAILED IN SOME PARTS OF RAJPOOTANA, SINCE THE MONTH OF JULY, 1836. By JAMES RANKIN, M.D. Published by authority of the Indian Government. Octavo, 1838, Calcutta, G. H. Huttman.

IN a short notice which we took of the first volume of the Bombay Medical Transactions, we adverted to a kind of "PLAGUE" which ravaged some of the upper provinces of India, in the years 1818 and 1819, but of which we heard little or nothing in this country till the present time. The volume before us draws our attention to a "plague" of still more recent date, and which will probably supersede the terrors of the cholera, since our Indian brethren seem to attach the character of contagion—or at least infection—much more to this epidemic (if the term be allowed) than to the famous plague of Jessore, of 1817. We shall endeavour to compress our notice of this volume into as narrow a compass as possible, well knowing the indifference of European readers to any thing Oriental which is not likely to come home to their own doors. They had better remember the cholera, however, which was much less likely to pay us a visit than the "PALI PLAGUE" is, if the infectious nature of the malady is truly estimated.

It appears that, in the month of July 1836, a destructive fever broke out in the principality of Joudpoor, or Marwar, at PALI, a large town, which is reckoned the emporium of the trade between central India and the sea-ports of Guzerat. In that place 650 of the Chepahs (printers of plain cloth,) died—then suffered the Brahmins—next, the retail merchants—and lastly, the inhabitants generally. It is supposed that out of a population of 15 or 20 thousand, four thousand died, at the rate of 50 or 60 daily. Many fled to the neighbouring villages, and the disease appears to have spread with them. In September the epidemic reached Joogit, and in October it invaded Goodpour, the capital of Marwar. Passing over a hilly tract, it invaded Deogurh in Meywar, and reached Rhambgur in the district of Ajmere. By April the sickness had approached the British cantonment, near Nusserbad, and then alarm was created. The mortality was rated by the inhabitants at one hundred thousand souls—but this was perhaps an exaggeration. Not more than one in three recovered. Mr. Maclean was despatched to Pali, to ascertain the nature of the malady, and he pronounced it to be the "plague"—"though not in its worst form." Dr. Irvine, also,

came to the same conclusion, contrary to first impressions. Dr. A. Kier "did not dissent from his professional brethren." All, in short, who saw the malady, agreed that it was the PLAGUE.

The Bombay Government took the lead in precautionary measures, a similar disease having prevailed in some of these provinces in 1821.

"Happily without experience in meeting such a calamity, Sir Charles Metcalfe, seems to have taken for his guide Sir Thomas Maitland's regulations and Mr. Tully's account of their practical efficacy, in excluding or extinguishing Plague in the Mediterranean Islands. The minute, based on this authority, consequently assumed the leading principle that the disease, being simply contagious, might be stopped and escaped by avoiding contact with the sick, or close proximity to them and what had touched their bodies. From this fundamental doctrine, very fully explained in that document, the instructions were deduced in detail: and a modification of arrangements which had proved so successful in insular situations, was, as far as it could be, made applicable to a continental country divided only by arbitrary boundaries. Exactly the same measures, however, seemed demanded for the protection of both localities when once the Plague had got admission into them. In anticipation of such an event, therefore, orders were given to isolate every town or village in our territory as soon as it became affected; and to allot six separate places within it to the following purposes: 1st—An hospital for the infected. 2nd—A depot for the strongly suspected. 3rd—Another depot for the slightly suspected. 4th—A place of quarantine for new comers. 5th—a depot for infected or suspected goods, where they might be deposited until purified; and 6th, a residence for expurgators. These expurgators conveying the sick to the hospital, and the dead to their graves, disinfecting their houses and destroying tainted articles, were to do all the duties expected of persons bearing that designation in the East of Europe. The line of circumvallation, guarded partly or wholly by armed men, to prevent ingress and egress, was to allow no provisions to enter unless by authority of the Quarantine Officers; and in paying for them, the inhabitants of the infected spot were to drop their money into a cup of water, from whence the sellers might take it without risk." 8.

Thus the beautiful code of quarantine promulgated by our first Cholera Board in London, and embellished in the Quarterly Review, was firmly established over the boundless hills, plains, jungles, and woods of India. The disease has hitherto confined itself [we beg pardon, *has been confined*] within the limits of Marwar and Merjar; but the following passage is somewhat startling.

"In finishing this brief history of the Pali disease, I have to mention with reference to the discussion which will be introduced in another section, that an *epidemic with the same pathognomonic symptoms* has been known in the mountainous territory of Kamaoon since 1823; that while the reputed Plague prevailed in the west, common intermittents and remittents existed in the intermediate space; and an infectious *yellow fever* devastated our villages and jails in the east, of Upper India." 12.

DESCRIPTION.

"The symptoms of the Pali disease are those of other severe fevers common in India, with the superaddition of swellings of the external glands." "The presence of buboes and the absence of yellowness of the skin are the only remarkable circumstances which distinguish it from the Moradabad epi-

demic—both maladies having been in an equal degree infectious." The glandular affection is the sole peculiarity of the Pali disease, and as buboes are not the essential characteristic of the Levant plague, the Pali disease is not, therefore, plague in the sense of modern authors and teachers, implying its derivation, directly or indirectly from Egypt or the Levant—"but a fever which local causes produced, and circumstances rendered malignant and infectious." This is moderate doctrine—and may be very near the truth. The following concise symptomatology of the disease is interesting to us, even at this distance.

"No sense of indisposition gives warning of the approach of this disease. It comes on with slight rigor, headache, nausea, and pain in the loins. The skin soon grows hot and dry. the pulse, from 130 to 150 in the minute, is soft and easily compressible. The tongue is variously covered with white, light brown, or darkish fur, and these colours are sometimes intermixed. Vomiting and irritability of stomach occur, though rarely. The bowels are bound; the abdomen tumid and full, is seldom painful on pressure. The eyes appear heavy, maudlin and bloodshot, and occasionally look as if injected with lake. The countenance is expressive of anxiety and inward pain, the respiration apparently unaffected by the predominant malady, is often impeded by concomitant inflammation of the lungs. Glandular swellings appear in the groins, armpits, and neck, most frequently on the left side, as also under the jaws and ears, and in the upper part of the thigh. They are generally perceptible on the first or second day, and rarely increase above the size of a walnut, but in some instances they become much larger, burst, and discharge purulent matter.

The symptyms are sometimes all so mild that the sick keep walking about till they gradually recover. In most of the cases observed there was a visible abatement of the disease every twenty-four hours, towards morning. But in the worst forms of it intense fever continued night and day without any remission, the patients could not rise from their cots on account of extreme debility, and an attempt to raise them to the erect posture produced fainting. Hemorrhage from the lungs took place in a few and was much dreaded. Delirium occurred rarely at the beginning, but come generally supervened shortly before death. When violent the malady ran its fatal course in three days. When mild with or without the affection of the glands—it was protracted to fifteen or twenty days like the ordinary fevers of the country." 16.

Excepting then the glandular swellings, all the other morbid phenomena of the Pali Plague were observed in the contemporaneous fever raging from Kurnaul to Moradabad, as witnessed by numerous medical officers.

"All of them depict the same indications of pestilence, infection, prostration of strength, the muddy and blood-shot eye, the white crusted tongue, hemorrhage, delirium, coma, and rapid dissolution of two-thirds of those taken ill. This eastern epidemic of Upper India, with all, except one, of the signs of the western malady, had others which are less common in this country. It exhibited in particular that instantaneous and mortal depression apparently unpreceded by any morbid action or sensation, a phenomenon characteristic of the worst form of pestilence, which seems never to have occurred in Rajpootana. It is well known that the Greek word, from which the Plague derives its modern name, signifies a *stunning blow*.

But the most remarkable exception to the uniformity of the two disorders is that, at Pali the external glands, and at Moradabad the hepatic system are prominently deranged. Hence buboes obtained for the more distant one the name with all the terrors of *Plague*, whilst the other, in the heart of our North Western Provinces, though jaundice attended it, being simply called *fever*, created no alarm and hardly attracted notice." 24.

Our author, while he believes the Pali Plague to be an infectious fever of local origin, similar to the Levant disease, gives up all idea of its being imported from the one country into the other. The sources of this epidemic are, with probability, traced to vegeto-animal exhalations from the surface of the soil.

The author has brought forward authentic facts, and has reasoned well in support of the foregoing opinion, and we quite coincide with him in the conclusions which he has drawn.

In respect to the treatment, so few opportunities were afforded to the European practitioners, that little more can be gleaned from their reports than that the means employed in fever generally, were those chiefly trusted to in the Pali Plague. We shall conclude with the following most sensible and judicious observations :—

"The fact that the Moradabad fever, though equally infectious and severe, attacked none but the poorer classes of natives in foul and ill-ventilated places, authorises a belief that had the Pali disease extended to the British provinces, it would have been confined to similar persons and localities

Quarantine and preventive lines, by stopping some individuals, in whom the distemper lurked and who if taken ill subsequently might have caused it to spread in villages within our territory, like those in which the sickness originated, no doubt lessened the chances of the infection being carried beyond the cordons. Such precautionary measures are therefore so far beneficial. But suspending trade and labour on which the physical well-being of the people mainly depends, the good which they do is more than counterbalanced by their tendency to produce famine and the very diseases that they are intended to prevent or eradicate. The possibility of making extensive cordons impassable on continental frontiers, were it desirable, appears doubtful." 53.

A chart accompanies the work, in which are laid down the towns and villages in which prevailed three apparently different epidemic diseases—the Pali Plague—yellow fever—and the remittent fevers of India generally. That these were all three modifications of one and the same disease, there can be no rational doubt. In some localities the common remittent of hot climates was undisturbed in its course and features, or only aggravated in degree—in other localities the force of local causes fell on the hepatic system, and jaundice was the prominent feature—and other places, the characteristic feature displayed itself in the glandular system, and buboes, &c. reminded the spectators of the Plague of Egypt and the Levant.

In a large Appendix are recorded the reports and statements of several medical officers, from which documents the author has drawn up his deductions with great perspicuity, moderation, and ability.

AN EXPERIMENTAL ESSAY ON THE RELATIVE PHYSIOLOGICAL AND MEDICINAL PROPERTIES OF IODINE AND ITS COMPOUNDS; BEING THE HARVEIAN PRIZE DISSERTATION FOR 1837. By *Charles Cogswell*, A.B. M.D., &c. Octavo, pp. 179. Edinb. 1837.

WE owe Dr. Cogswell an apology for not having noticed his Essay sooner. Our apparent neglect of it has arisen from accidental circumstances solely, and not from an unfavourable opinion as to its merits. On the contrary, we regard this first production of Dr. Cogswell's pen, as at once an evidence of his past industry, and an omen of his future professional success.

Since the first introduction of Iodine into medicine, we have not failed, from time to time, to make our readers acquainted with all the really important observations that have been published respecting it. In our number for January, 1832, we inserted a minute and lengthened analysis of Dr. O'Shaughnessy's Translation of M. Lugol's work; and to this we refer our readers for many observations of a very valuable nature.

Dr. Cogswell, after discussing the history both of burnt sponge and iodyne, details briefly the chemical properties of the latter, and then proceeds to treat of its "physiological action." Dissatisfied with an experiment of Orfila, which goes to prove that the presence of iodine in the cellular tissue of animals does not produce any injurious constitutional effects, he repeated it, with a result apparently different. We can see no good whatever in the practice of such barbarities. The local lesion must, of itself, produce more or less constitutional irritation, and cannot fail therefore to prove a perplexing element in the calculation and estimate of results. It might fairly be argued from Dr. C.'s own experiment, that as the constitutional symptoms did not display themselves until a fortnight had elapsed, they were attributable solely to the "large abscess" created by the local action of the iodine. Dr. C. himself notices this source of fallacy, and states it as a sufficient reason for not repeating the experiment.

The physiological effects of iodine are described as they are produced by large, or by small and repeated doses of the substance. This very apposite and convenient method is adopted after the example of Dr. Christison. It would appear from some well-authenticated observations, that idione may be taken in very large quantities without producing poisonous effects. As it forms an insoluble compound with albumen, food containing a large proportion of that substance must very much modify its operation. But though in some cases it would appear to have proved an inert agent, in many others it has been known to give rise to very violent symptoms. Nor can this be wondered at by any one who has witnessed the effects of its application to the skin. But there are some men in our profession who make it their object to discover, not how much of any medicine may be sufficient to effect a desired object, but how much a man may take without being killed by it. These empirics (we use the word in the ancient sense) have certainly proved, that the mucous membrane of the stomach and bowels can bear more than, but for their temerity, we should ever have supposed possible.

Dr. Cogswell injected two drachms of the tincture of iodine into the jugu-

lar vein of each of two dogs. Both died. In a similar experiment with a third dog, he injected only one drachm, and the unfortunate brute recovered on the third day. We can glean no useful results from these unfeeling experiments. Those who practise them on a large scale, must, we have often thought approximate in nature much more nearly than ordinary men to the Yahoos of Houyhnhnm land, who were remarkable both for their filthiness and their cruel disposition.*

In small doses frequently repeated, iodine acts as an excitant of the whole system, but primarily and more especially does it affect the digestive mucous membrane. When continued injudiciously, it often according to our own experience, gives rise to a peculiar kind of fever, characterized by breathlessness, palpitation, a very quick and weak pulse, urgent thirst, and a sense of extreme weakness, which last symptom is that of which the patient most complains. The symptoms in fact resemble very closely those of *mercurial erethism*. They may be removed in a few days by discontinuing the use of the iodine, and prescribing small doses of ammonia.

After discussing the question, "is iodine a cumulative medicine," and failing to come to any positive conclusion thereupon, Dr. Cogswell treats of its different formulæ and the manner of their application; and then proceeds to consider the several diseases in which iodine has been administered with advantage. His authorities are selected with industry and judgment, and he has the rare merit of not being prolix. To *analyse* this part of the work, which is itself an analysis of almost all that has been written on the subject, would be difficult; and as it does not contain any new observations, we pass it over with this remark, that we are firmly convinced the general curative properties of iodine have been greatly exaggerated. As to its efficacy in what are called "nervous diseases," we believe it gene-

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* *Suum cuique* is a maxim which we approve of so highly, that we have often had it in our mind to write a book, expressly on purpose to shew how many pretended modern discoveries, in medicine may be traced back to the older authors. The above allusion to Gulliver's Travels reminds us that Dr. O'Beirne (who needed as little as most men to claim another's merit) has never acknowledged (which he ought in justice to have done) that he borrowed his plan of defæcation from one of the professors in the grand academy of Lagado, whose mode of curing a colic is thus described. "He had a large pair of bellows, with a long slender muzzle of ivory; *this he conveyed eight inches up the anus, and drawing in the wind, he affirmed he could make the guts as lank as a dried bladder*. But when the disease was more stubborn and violent, he let in the muzzle while the bellows were full of wind, which he discharged into the body of the patient; then withdrew the instrument to replenish it, clapping his thumb strongly against the orifice of the fundament; and this being repeated three or four times, the adventitious wind would rush out, bringing the noxious along with it, (like water put into a pump,) and the patient recover."—*Voyage to Laputa*, Chap. V.

We have given here at full length the celebrated professor's method of cure, but Dr. O'Beirne has adopted only the former process, being most probably afraid of putting in practice the latter, and not, we must own, without reason; for we are told that the dog on which it was tried "died on the spot." At the same time (it is due to our readers to add) the excellent historian from whom we quote, asserts plainly, that he "*could not discern any effect from the former process.*"—*Rev.*

rally does more harm than good. Even in scrofula, we doubt whether, as an internal agent, it effects nearly so much good as it is generally thought to do. Its external application as a counter-irritant is under many circumstances productive of benefit. But routine practitioners, with whom iodine, in its several forms, is a sort of panacea, very often (we speak from personal observation) apply it to joints affected with acute synovial inflammation. In fact, iodine is now so universally, so thoughtlessly, and indiscriminately employed in the treatment of almost all diseases, that, by a fate common to all over-praised remedies, it must needs fall, before many years shall have passed, into even unmerited neglect.

We have thus taken a survey, as it were, of 84 pages of Dr. Cogswell's Treatise. There still remain an equal number which are occupied in treating of the several preparations of iodine. These are severally considered, first, with reference to their physiological action, and secondly, as regards their medicinal effects. The section which treats of the iodide of potassium, or the hydriodate of potash as it is generally called, extends from the 85th to the 117th page, both inclusive. It contains an excellent summary of all that is known on the subject, and is well worthy the attention of the reader.

There is in this part of the work a coloured plate, which represents the inflammatory results produced in the stomach of a rabbit, by the injection of a drachm of hydriodate of potash, dissolved in two drachms of water.

While on the subject of the hydriodate of potass, we may state that we have found it, in combination with tincture of iodine, diluted with water, prove a most efficient application in more than one of the worst forms of porrigo.

Of the remaining compounds of iodine we shall notice only one—the iodide of zinc, and that too solely for the purpose of remarking, that during the last six years we have occasionally employed it, with apparent advantage, in a variety of scrofulous affections. We were first led to do so by having noticed the marked efficacy of sulphate of zinc dissolved in distilled water, when used as an injection for scrofulous sinuses. It was an easy and a natural step to come to the resolution of trying zinc and iodine in combination. We have usually begun with one grain of the compound, dissolved in infusion of quassia, for a dose, and have never gone beyond three grains. But we dare say that if the medicine should ever come into general use, some very clever person will discover that a patient may take a drachm or more—without being killed by it.

During the last two years we have been in the habit of employing a strong solution of the iodide of zinc, as an application to the tonsillary glands, when affected with chronic enlargement; and we can recommend it to our readers as the best *local* remedy we know for that most obstinate complaint.

There is attached to Dr. Cogswell's work an Appendix of nine closely printed pages, which contain several observations worthy the notice of the reader.

Our opinion of Dr. Cogswell's Treatise has been more than once expressed in the foregoing pages. In such a book, written as it would appear, by one who had just completed his university studies, much original matter was not to be expected. But judicious selection, clear arrangement, and a

just proportioning of attention to the several parts of the subject—these it was not too much to look for in a work which had obtained the prize of the Harveian Society; nor have we looked for them in vain.

The *style* of a medical writer is only a matter of secondary consideration, unless when it is so obscure as to make the sense doubtful to readers of ordinary capacity. But in the case of young authors, it seems desirable to attach more importance to it, so that by early correction of any errors into which they may fall, they may come at length to write with both clearness and accuracy. We have no particular fault to find with Dr. Cogswell's style, except that the sentences are sometimes too long or too complicated. As an instance of the latter, we quote, almost at random, one from the Introduction, (page 12.)

"But, as we hinted above, and the fact will only become too manifest in the subsequent pages, from the experience of all parties, himself included, without paying the most scrupulous attention to the chemical habitudes of iodine, we shall constantly be liable to form erroneous or imperfect conclusions."

It is easy to perceive how the above sentence might have been made more intelligible, by separating in a more marked manner the parenthetical clause; but it would have been still better to have constructed it in a different and more simple manner. We make this piece of criticism (which, after all, is not worth much) in a good spirit, and we beg to take our leave of Dr. Cogswell by wishing him that success in his profession which his industry and talent seem to deserve.

A Treatise on Inflammation. By *James Macartney*, M.D. F.R.S. &c. &c. &c. Quarto, pp. 214. Two Plates. Longman's, 1838.

It will probably appear a hazardous experiment to publish a work upon inflammation at present. The subject is so hackneyed as to excite little curiosity or attention, and few persons would conceive it possible that any man could advance new views of its nature, or new plans of any value in its management.

But Dr. Macartney's reputation will secure that notice which might otherwise be denied, and command a full audience and respectful attention whenever he addresses the profession. We may be satisfied that we shall meet with ingenuity and originality, and whether we are convinced or not, we are certain of pleasure and instruction,

Dr. Macartney tells us in a brief advertisement, that:—

"The present Treatise contains the theory and practice, respecting the subject of inflammation, which I have taught during many years in my lectures on surgery. Its publication did not become necessary, until I had resigned my professorship in the University of Dublin, as I had annually the best means, perhaps, of promulgating and explaining my views in the form of lectures. The delay has been attended with the great advantage of enabling me to verify and improve my early opinions, by a longer experience, and by the successful prac-

tice of my pupils, who are now settled in every part of the United Kingdom and throughout our Colonies. Whatever the profession may think of the doctrines I have advanced on the subject of inflammation, the practice founded on them is at present established too extensively, and confirmed by the experience of too many individuals, to admit of controversy.

We shall run through these lectures, or this Essay, as rapidly as is consistent with justice both to the author and our readers. We shall content ourselves with noticing those parts that are either novel, or give some new turn or some striking confirmation to what has been familiar.

The work is divided into fourteen parts, or sections, in which Dr. Macartney discusses in succession—The History of Inflammation—Phenomena of Inflammation—The Real Consequences of Inflammation—The Reputed Consequences of Inflammation—The Different Modes of Reparation—Cicatrization—The Reparation of the Different Tissues—The Constitutional Causes of Inflammation—The Local Causes of Inflammation—The Proximate Cause of Inflammation—Species of Inflammation—Congestion as contradistinguished from Inflammation—The Remedies for Inflammation.

1. *History of Inflammation.*—Dr. Macartney presents a brief sketch of the different classes of animals, in reference to their liability to inflammation.

In those zoophytes which present no visible nerves and a very simple nervous system, none of the phenomena of inflammation are exhibited.

Dr. Macartney alludes to the phenomena of reproduction in the articulata. The instances are numerous, the phenomena rather varied, and we do not perceive conclusive proof of the non-existence of inflammation in the class.

The class mollusca, says our author, do not seem to be capable of genuine inflammation.

Ascending to the vertebrata, Dr. Macartney does not believe it possible to produce the genuine effects of inflammation in either amphibia, or reptiles, or fishes.

"In conducting some experiments on the swimming-bag of *fishes*, I was surprised to find that the wounds made into the belly of the animals did not inflame. I was therefore curious to know what injuries fishes would bear without producing inflammation. Having taken some living fishes from the water, I introduced pieces of wire beneath the skin and amongst the muscles of the body; the fishes were then returned to the water, and on examining them several days afterwards, I found that no suppuration had taken place. The tracts of the wounds were pale and smooth, and only moistened with a serous fluid, and none of the usual appearances of inflammation were visible. A very common occurrence in fishes, is the existence of worms, which perforate the tunics of the alimentary canal, without producing any change of structure, except an increased vascularity around the perforations. The reproductive power of fishes is confined to their fins, which are sometimes regenerated after being lost by accident, or by a species of death which is quite different from that which is the consequence of inflammation in the higher classes of animals.

I have never seen any appearance of inflammation in *reptiles* after wounds or injuries. *Serpents* often lose a portion of their tail; and although there is no attempt made for its reproduction, it is very speedily cicatrized without inflammation. Some *lizzards* are able to reproduce parts that are lost, though not so

perfectly as in the lower classes of animals. When lizards get a new tail, it wants the vertebræ. The *salamander* has more power of reproduction than any other of the class, being capable, according to the statement of many physiologists, of regenerating the tail, the limbs, and the lower jaw. I have seen imperfect attempts at the reproduction of the fingers and toes in the *toad* and *frog*. In all this class of animals, there is great tenacity of life, and power of repairing the effects of injury, though not always the ability of regenerating limbs. Having had occasion to make the experiment of removing a part of the brain of a *toad*, it became necessary to take away a considerable portion of the skull. The wound never seemed to inflame. In a very short time it was healed, and the vacancy in the skull was made up by a substance half cartilage and half bone, leaving, however, a depression, corresponding to the quantity of brain removed." 5.

In birds external mechanical injury produces indubitable inflammation; but the instances in which internal disorders become a cause of inflammation, are very limited, and are nearly confined to febrile states and particular epidemics.

Quadrupeds are subject to inflammation both from external injury and internal disorders; they usually, however, shew but little constitutional sympathy with local disease.

Man is especially prone to inflammation, as well as to constitutional and sympathetic disturbance.

Upon these data and premises, Dr. Macartney founds a much bolder hypothesis than will probably be suspected by our readers. This hypothesis contains the spirit of the book, and embodies the main fact, which its author endeavours to establish. Let him speak for himself.

"The history I have given of the effects of injury in the different classes of animals, proves that the powers of reparation and of reproduction are in proportion to the indisposition or incapacity for inflammation, and leads necessarily to the induction, that inflammation is so far from being necessary to the reparation of parts, that in proportion as it exists, the latter is impeded, retarded, or prevented, and that when inflammation does not exist, the reparative power is equivalent to the original tendency to produce and maintain organic form and structure; that it then becomes a natural function, like the growth of the individual or the reproduction of the species. I am aware that this opinion is opposed to universally received doctrines. The subject, I think, has never been fairly examined. The necessity of some degree of inflammation to the process of reparation has been supposed by the early surgeons, and has been received by the moderns without inquiry. The opinion arose in those rude ages of the art when nothing was trusted to nature, and when the treatment of every wound was such as to induce and maintain for a certain time the most severe inflammation. The ignorance of the ancients of the use of the ligature for suppressing hæmorrhage, led them to employ, instead of it, strong compression, and the actual cautery in cases of wounds and after amputation; and being accustomed to see wounds ultimately heal after such barbarous treatment, they naturally supposed that inflammation and all its evil consequences were necessary; which they took care to ensure in all cases, by boiling oils, hot and irritating ointments, tents, setons, and strict and cumbrous bandages." 7.

After proceeding to notice and partly to criticise the views of Mr. Hunter, and to point out inconsistencies between his doctrines and his facts, Dr. Macartney seizes on a passage in Sir Astley Cooper's lectures, as a fair point on which to try the issue—inflammation or no inflammation in the reparation of injuries.

"The doctrine," he observes, (that inflammation is necessary) "has been

avowed by Sir Astley Cooper in the strongest language, in his Lectures on Surgery, published by Mr. Tyrrell. The passage may be taken as expressing the general opinion of the profession in this country on the question. He says: '*Inflammation is a restorative process; no wound can be repaired without it; even the little puncture made by the lancet in bleeding, would inevitably destroy life, if this salutary process did not prevent it.*'

I am well pleased, that the doctrine has thus been so clearly and unequivocally asserted, that no doubt can exist respecting the meaning of the author. It is also fortunate, that Sir Astley has selected the wound made in venesection as his example; as I shall afterwards have occasion to quote the healing of this wound, as one of the strongest and most familiar instances of union being effected, without the slightest inflammation." 9.

We would make a few observations before we proceed any farther.

1. We perceive that confusion is already approaching from the vague sense in which the term inflammation is used by the respective parties. Dr. Macartney does not define what *he* means by inflammation—whether certain phenomena, as swelling, redness, &c.; or certain effects, as adhesion, suppuration, or so on. Mr. Hunter, whose want of education was so unfortunate, sometimes employs "inflammation" in one sense, sometimes in another. Yet this makes all the difference, especially in a dispute.

2. We may, nay we must conceive, that though the pathological state of inflammation be excitable in all animals, its mode will vary in the utmost possible degree. In an animal with a distinct circulating nutritive fluid, inflammation consists essentially in an abnormal afflux of that fluid to a part. How different must the phenomena be, in a creature with red blood or white, with warm blood or cold. If this be so, and reason informs us that it must, how essentially must the nature of inflammation be changed when we arrive at animals, as the polype, in which we can detect no circulating fluid at all. If there be no such fluid, it follows of course that there cannot be any partial or abnormal collections of it. Yet the purposes served by inflammation elsewhere, may be served in such animals by a different process—different in mode, but similar in objects. Animals in this category cannot legitimately be compared with those which possess a true circulation, undoubtedly not with the highest of that class endowed with warm red blood.

To determine the precise points of analogy or difference, a series of experiments would be required. But Dr. Macartney communicates none. The actual effects of mechanical and chemical stimuli—the results of various lesions—the changes, if there be such, of disease, are not stated by our author, and do not appear to have been determined. Yet, in the absence of direct experiment and of positive information, we do not feel ourselves warranted in assenting to the position, that nothing analogous to inflammation occurs in the lowest animals.

3. The statement that reproduction is greatest where inflammation is least or is absent, requires something more than that naked announcement. In the simplest animals the whole body is comparatively homogeneous, and there is no centralization of fluids or of organs. All the molecules, then, must have, loosely speaking, the same powers, and the addition of fresh molecules is comparatively simple. But as animals rise in the scale, centralization obtains, the parts are no longer simple, no longer homogeneous, their life consists in a finely adjusted balance and dependence, and the re-

production of lost parts becomes too great an effort. It is unphilosophical to imply that reproduction is less active in these creatures because inflammation is more so. The cause of both phenomena is to be sought in the centralization of the vital powers and organs. The polype may, for aught that appears to the contrary, have inflammation in its own way, thought it cannot have the "dolor, rubor, calor, tumor" of man. In the polype, increased vital energy in the molecules of the part, may constitute the essence, and give rise to undoubted effects of inflammation—in man, such augmented local action would be useless, unless combined with correlative augmented energy in the vital organs.

4. When surgeons of the present day assert and believe that inflammation heals the simplest wound, the best informed imply or understand nothing more than this:—*that*, after the simplest wound, an effusion of plastic material takes place, which forms first a bond of union between the divided surfaces, and afterwards is more or less identified with them in structure; *that*, these changes are attended with a certain afflux of blood to the part; *that*, this appears the simplest mode of what an increased ratio constitutes the pathological state, and gives rise to the effects of inflammation: and *that*, the steps from this restorative adhesion to the more aggravated phemomena of inflammation are so gradual, that it is impossible to fix any positive limit between the reparative and inflammatory process.

The second Chapter is on the Phenomena of Inflammation. Dr. Macartney commences by digressing to the hypothesis of the cause of animal heat. If we have observed some indications of a tendency to confident generalization in the previous chapter, those indications are rather augmented in the present one. The opinions of physiologists are daily leaning more and more on the connexion between animal heat and respiration—a connexion supported by a broad survey of the animal kingdom. But Dr. Macartney decides in the negative. It would be foreign to our purpose to enter on so important and extensive a question. We must content ourselves with stating that we do not and cannot go along with our author in several of his opinions and conclusions. We may observe that Dr. Macartney is disposed to ascribe the increased heat of inflamed parts, more to their state of local or organic sensibility, than to the condition of their arteries, as regards circulation or secretion—an opinion which is certainly less simple and less intelligible than the commonly received one.

Dr. Macartney treats seriatim of the signs of symptoms of inflammation —heat, pain, redness, swelling, and altered or suspended natural secretions. On each, his remarks are ingenious. We pass to the next Chapter, on the—

Consequences of Inflammation.

Dr. Macartney very properly observes that, what are denominated the phenomena of inflammation are the *immediate effects* of the augmented sensibility and circulation in the parts engaged. To these succeed, or rather, there arise out of them as a matter of necessity, if the inflammation persist for any time, a number of consequences. These he enumerates as *chemosis*, *œlema*, *vesication*, *suppuration*, and the total *disorganization* and *death* of the part.

1. *Chemosis.*—"When *chemosis*, or the extravasation of the blood, takes place without a rupture of the vessels by mechanic injury, it is not designed to become organized, and therefore it remains in a fluid state. The absorption of the blood, when shed under these circumstances is tedious. I have known chemosis arising from erysipelas of the face, remain for months before it was removed. When blood is found extravasated in an inflamed part, there are always, I think, ruptured vessels. Such effusions take place under circumstances favourable to the laceration of the small arteries; as when inflammation is very violent, or occurs in lax cellular tissue; or where parts are not yet supported by the deposition of coagulable lymph. Thus, the mucous membrane and the surface of ulcers, when highly inflamed yield blood. The loose cellular membrane joining the conjunctiva to the globe of the eye, becomes charged with blood in severe opthalmia, and the submucous tissue of the great intestines is similarly affected in acute dysentery. In the first steps towards the formation of an abscess, before the parts are made solid by coagulable lymph, blood is commoniy extravasated.

In some abscesses, as those of the liver, spleen, and brain, we sometimes see with the naked eye the lacerated vessels; and in the first, I have observed the biliary vessels also to be broken, and the bile mixed with the blood and pus contained in the cavity of the abscess. The best evidence is to be obtained by injecting any part, in which blood has been extravasated, when the fluid injection will escape through the broken vessels and imitate the previous effusion." 24.

It will be observed that Dr. Macartney employs the term Chemosis, to signify extravasation of blood. Ecchymosis is the designation usually given to that pathological condition, and chemosis is commonly understood to mean effusion of serum into the submucous cellular tissue, with inflammatory redness and turgescence of the mucous tissue itself. We mention this, to prevent misconception on the part of our readers. An observation of Dr. Macartney's would imply that he considers chemosis in the eye as purely extravasation of blood. There is some confusion in this.

2. *Œdema.*—This, says the Doctor, is the diffused extravasation of serum. It is usually found in relaxed and depending parts. It may occur with a very low degree of inflammation, as in some species of erysipelas. Persons are most prone to œdema in inflammation, who have the small veins full, or who have a tendency to anasarca; and the parts of the body where œdema is most remarkable, are those in which the cellular membrane is most lax, as the eye-lids, the prepuce, the scrotum, and the external labia of females. Œdema is always unfavourable to reparation, and parts once affected with it, are apt to retain some serum in the cellular membrane afterwards, giving them a bloated or tumid appearance. Where the disposition to œdema is general in the body, it is a proof of weakness, and often leads to a fatal result, after severe accidents or surgical operations.

3. *Vesication* is familiar. It may result from simply increased irritation in the vessels of the cutis—or from inflammation in constitutions or parts which are incompetent to effect reparation; so it accompanies mortification.

4. *Suppuration.*—Dr. Macartney considers this as always arising from more or less of inflammatory action. His remarks upon the process need not detain us.

Speaking of *acute abscess*, our author offers the following rationale of the observable phenomena. In the first instance always, he says, some of the

small vessels give way, and some blood and serum are poured out into the surrounding tissue. In order to separate the disorginazed from the healthy structure, lymph is shed, by which the extravasation of the blood and serum, is restricted within certain limits. This lymph next acquires vascularity and organization, and then, and not before, the secretion of pus commences. In the first stage of abscess, if the fluid be evacuated, it is well known to consist of blood and serum streaked with pus. As the lymph which is designed to compose the walls of the abscess advances in organization, pus of a better quality is secreted; and as the contents of an abscess are proved to be, like the other parts of the body, transitory in their existence, while fresh pus is being added, the original contents are removed by absorption; hence, an abscess of some duration is found only to hold genuine pus. During the time that this change is taking place in the fluid contents, a similar one is proceeding on the solid walls of the abscess. On the side, the process of absorption is reducing the thickness of the parietes, while the other sides are increasing in the same proportion, by the addition of new substance. There is also another remarkable circumstance attending the progression of an abscess, which was first accurately described by Mr. Hunter. On the side of the abscess that is becoming thinner, there is also a disposition to yield, or to be extended; and on the side that is growing, there is a tendency to contract. The pus of an abscess is, therefore, brought to those surfaces on which it is to be evacuated, by four processes—absorption, new growth, extension, and contraction; and as the object to be attained in this case, is the removal of the fluid, the same means are employed for conducting extraneous substances out of the body.

It is not generally supposed that the effusion of lymph and its vascularization are necessary for the secretion of pus. The observation of Dr. Macartney, if well founded, is interesting. Yet, as we see pus formed by mucous membranes, it is not impossible that other tissues when inflamed may do so by their own vessels independently of effused lymph.

Chronic Abscess.—When the attempt, continues our author, is made to form an abscess by weak or scrofulous constitutions, and in situations where the cellular substance is lax, the progress of the disease is very different from that above described. The first extravasion is serum, which passes easily into the large cells of the cellular membrane, with little or no injury to their structure; the parietes of the chronic abscess are not composed in the beginning of organized and vascular lymph; no genuine pus therefore is found in such cavities in the first instance; the fluid they contain is serous, mixed with coagulable lymph, parts of which are found as flakes floating in the serum. As the cavities of chronic abscesses are not provoked, either by severe tension, or the quality of the contained fluid, there is no preparation made for some time to remove their contents. These collections therefore often traverse a considerable distance along muscles or under plates of fascia, before they arrive at the skin, which ulcerates very slowly; after which the cavities may inflame, their interior surface become more highly organized, and secrete genuine pus.

He proceeds to remark that sometimes these abscesses, even when of considerable size, are absorbed.

"I have known this occur several times in psoas abscess, where there was

no disease of the vertebræ. In one instance a young lady had one of these languid abscesses formed suddenly above the clavicle; it descended behind the clavicle, and proceded underneath the mammary gland until it came to the waist, where it was finally removed by absorption; the patient's constitution was strengthened, during this time, which I have found in several instances effectual in causing the absorption of such collections." 34.

Dr. Macartney offers nothing new on the termination of inflammation in mortification, or disorganization of a part.

ON THE REPUTED CONSEQUENCES OF INFLAMMATION.

Dr. Macartney apologizes for including under the head of reputed consequences of inflammation, the *effusion of coagulable lymph*, and *ulceration*. These, he says, are processes which, from being sometimes associated with inflammation, are ascribed to an inflammatory action, although in their own nature they are perfectly different. This is a startling assertion, particularly when coming from a man like Dr. Macartney. Our readers will be naturally inquisitive to learn his proofs.

"It is well known," he argues, "that coagulable lymph may be thrown out by a natural and healthy action, as in the formation of the decidua uteri: that it is eminently conservative, in arresting hemorrhage from opened vessels; in the union of all the soft parts when divided; in forming the medium of conjunction of fractured bones, and in constructing the walls of an abscess, and of an aneurismal sac. Immediately on the receipt of an injury, also, lymph is shed before there is time for inflammation to set in. The surface of a wound that does not bleed is covered by a layer of lympth, in the very moment that the injury is inflicted. The inflammation which would ensue from the opening of a serous cavity is sometimes altogether averted, and almost always restrained within certain bounds by the effusion of lymph, uniting the opposed surfaces with each other." 38.

After noticing the case of hydrocele, cured by an operation and disposing of it as an objection to his views, Dr. Macartney goes on to remark:—

"It is true, there are some cases of adhesion, which are highly detrimental to the parts concerned. Wherever freedom of motion is necessary to the functions of parts, adhesion may be inconvenient, or fatal. Thus, the iris has its office destroyed by being bound to the adjoining parts; the actions of the heart are embarrassed, by extensive adhesion between it and the pericardium; and I have known the general union of the peritoneal surfaces of the intestines cause strangulation of the whole alimentary canal, and death. It is also the agglutination by lymph, which is the most frequent cause of hernia becoming irreducible, and occasionally of the protruded parts being strangulated. The effusion of lymph in the trachea during croup, causes as much danger as the inflammation: so likewise, when the bladder and urethra are blocked up with lymph." 39.

But, he continues, the circumstance of evil occasionally resulting from adhesion is no proof that adhesion is the consequence of inflammation; and he cites the case of closure of the glotis against irrespirable gases, as analogous—a closure salutary in its intention, though actually endangering life.

Such are the grounds on which Dr. Macartney rests, in excluding the effusion of coagulable lymph from among the products of inflammation. They do not appear to us to be satisfactory.

1. Inflammation is a positive pathological state, marked by certain signs and symptoms. If, after those signs and symptoms, we find pus, or serum, or mortification, we conclude those states to be consequences of inflammation. It signifies nothing what may be the tendency of those consequences, whether salutary or pernicious to the individual. Whichever they may be, they are sequences of the state which we call inflammation.

2. So far as we can see, there are just the same grounds for considering coagulable lymph such a sequence, as for believing serum or pus to be so. A man has a sword run through his belly or his thorax. The familiar signs of inflammation follow, and we find, after death, serum, and lymph, and pus in the peritoneum. Why should we say that the first and the last are the consequences of inflammation, while the second is not? Take rheumatic pericarditis, or acute pleurisy, or even inflammation of the cellular membrane. During life and after death there is every possible evidence of the existence of inflammation, and we find lymph in abundance. These are positive facts, which it appears to us impossible to disprove, and almost equally impossible to explain on any other supposition than the one generally entertained.

3. It is no answer to say that lymph is usually salutary in its operation. That may or may not be the case. When lymph is effused on a mucous membrane or even around it, or in the cranial cavity, it may be pernicious. And pus may be proved by the same line of argument to be no consequence of inflammation; for the formation of pus by an inflamed mucous membrane is infinitely more salutary than that of lymph. Were the latter the usual sequence of inflammation in the urethra, the consequences of a common clap would be formidable.

4. The argument employed by Dr. Macartney, based upon the occasional effusion of lymph as a natural action, is more specious than conclusive. Either, in those instances, the usual phenomena of inflammation precede the effusion of lymph, or they do not. If they do, then the case is one of inflammation—if they do not, then the case is obviously different from that in which they do. Neither in logic nor in reason can it be allowed, that, because in one case inflammation does not precede the effusion of lymph, while in the other it does, therefore in the latter inflammation does not produce the effusion. To make this argument available, it should be shewn that, in both cases, the effusion is similar in degree and kind, and that in the latter the same circumstances exist, to operate as causes, which exist in the former.

5. The truth is, that from the simple cut, producing an effusion of the liquor sanguinis, up to the extensive and violent inflammation of peritonitis, is not a sudden jump, but a series of gradual transitions. The mere interruption of continuity of a few small vessels, and the slight stimulus of a trivial injury, give rise to the effusion of no more lymph than is sufficient to glue the edges of the wound. A more extensive lesion, particularly of certain tissues, leads to positive inflammatory action, and to the effusion of lymph in such an injurious quantity. But, as inflammation, in the first instance, is only an augmented capacity and action of the blood-vessels, it is obvious that there may be any degree of it between their normal standard, and the maximum of which they are capable. We think it would be just as unphilosophical to deny that the effusion of lymph is a common consequence of inflamma-

tion, as to assert that inflammation to any amount *must* precede it. It is impossible to maintain the latter position, until we determine with precision the limit between non-inflammatory and inflammatory augmented action. That has not yet been done.

Ulceration or *ulcerative absorption* is equally denied, by Dr. Macartney, the right of being a result of inflammation.

The same spirit of argument is employed by our author in this as in the former case, and mutatis mutandis the same mode of reply may be resorted to. The dispute is, pehaps, more verbal than substantial; yet, as we think that Dr. Macartney's views are calculated, in many respects, to breed perplexity, we cannot avoid objecting to them. It would be uncandid not to admit that Dr. Macartney reasons with great ingenuity, that many sound and excellent reflections are mixed up with his hypothetical opinions. All we think it necessary to quote from the remarks on ulceration is the following passage:—

The term *ulcer* is not a correct one. It expresses only a part of the history of the object, to which the name is given; or applies to that state in which the ulcerative process only is going on; perhaps, we might say, that in all instances, where either inflammation or morbid structure does not prevent it, the phenomena that belong to an ulcer, are more reparative than destructive; since in many cases of ulcers tending to cure, there is only that degree of interstitial absorption of the granulations which serves to approximate the edges of the sore, thereby diminishing the magnitude of the cicatrix. An ulcer, therefore, as it is usually presented to our observation, is the result of a compound, or rather opposed action, as the granulative, succeeds the ulcerative processes.

OF THE DIFFERENT MODES OF REPARATION.

Discarding the classification generally received of union by the first and by the second intention, Dr. Macartney proposes his own.

Re-union, he says, and re-organization are effected in four different ways, which may be designated in the following manner:

First, immediate union without any intervening substance such as blood or lymph.

Second, the union by the medium of coagulable lymph, or a clot of blood.

Third, re-organization without any medium of lymph or granulations, the cavity of the wound becoming obliterated by a natural process of growth.

Fourth, the reparation by means of a new, vascular, and organized substance, called granulations.

Speaking of the organization of effused lymph, Dr. Macartney makes the following observations, with which we are disposed to agree, in spite of the opinions of Muller to the contrary.

"Mr. Hunter assumed, that the vessels arose in the lymph, and subsequently established their connexion with the vessels of the part, because, he observed, that vessels began to form in the membrane of the incubated egg, before they existed in the fœtal chick. There is a great difference, however, between the original formation of vessels, and the acquisition of vascularity by lymph, de-

posited in contact with surfaces that are already organized; and it is more difficult to imagine, that vessels should commence in a clot of lymph or blood, than that they should be extended into it from the adjoining surfaces. It is also impossible to conceive that the thin layers of lymph which unite serous membrane, or the effusion which consolidates cellular structure, do not obtain their vascularity from the adjoining parts. Further, I have seen vessels passing for a short way into a clot of blood, covering the surface of an ulcer, when the coagulum possessed no vascularity of its own. I have also succeeded in forcing injection into the coagula formed in the cavities of the heart after death, which injection presented the appearance of red elongated lines." 51.

Reparation by the modelling process, has never, says our author, been described. However, when healthy parts are injured, although it may be to the greatest extent, if placed under the most favourable circumstances for carrying on their natural actions, the process of reparation is nearly the same as in animals of a simple structure.

"The pain arising from the injury soon ceases. No tumefaction ensues, separating the edges of the wound, and its surfaces are not only disposed to lie in contact, but even to approach each other so much, that they cannot be kept asunder by mechanic restraint; there is, therefore no necessity for the effusion of lymph; and as there is no cavity to be filled up, granulations are not formed. The surfaces of the wound, although they come into contact, do not unite by vessels shooting across; they are smooth, red, and moistened with a fluid, which is probably serum, and present the appearance of one of the natural mucous surfaces of the body If any parts have been killed by the injury, they are separated, by simply as much interstitial absorption as is sufficient to set them free. The wound is finally healed by the same means which determine the shape of the natural parts of the body. It gradually diminishes in extent until it is obliterated; or it may be cicatrized before the surfaces are abolished, after which the same process of natural growth goes on, until no part of the original wound is left. The cicatrix which succeeds the cure of injury by the modelling or growing process, is small, pliant, free from those callous adhesions to the parts underneath, and the morbid sensations that so often belong to those cicatrices, which have for their bases the deposits of lymph, or the new formed structures called granulations. When the modelling process or cure by natural growth goes on perfectly, there is no inflammation in the part, and the patients are so entirely free from all uneasy sensations, that I have known instances of their being ignorant of the real site and extent of the injury, until they had examined the part with their hand, or saw it in a looking-glass." 54.

We confess that we are not familiar with the mode of reparation, and we cannot therefore offer an opinion on the fidelity, or otherwise, of Dr. Macartney's description of it.

Dr. Macartney's observations on granulation are ingenious, but do not require particular notice from us.

Passing over the chapter on Cicatrization, we pause at that on—

Reparation in different Tissues.

Different tissues possess different powers of reparation. It is difficult to refer those differences to a general law, or to express the facts by any simple formula. But the simpler the tissue the more perfect is its reparation. It is both curious and instructive to examine the reparative process in each tissue.

A. *Nervous Tissue.*—Vacancies in the *brain* are not filled up by any substance, bearing a resemblance to the cerebral tissue. *The spinal marrow* also is never regenerated.

All wounds of nerves heal by the formation of a hard bulb or nodule; this exceedingly firm and condensed structure is found uniting the two ends of a divided nerve, and also surrounding the part of which it had been cut in amputation; therefore, this is the natural mode of the healing of a nerve, whether by the medium of lymph or granulations. Though visible nervous filaments have been fruitlessly sought for in the nodule, sensation and voluntary motion are restored, sooner or later, beyond it. In some parts, the nerves naturally present a very condensed structure—the posterior tibial nerve, for example below the inner ankle.

"When the nerves are divided some way from the end of the stump, I have been able to trace the appearance of filaments radiating from the bulbs and proceeding to the skin. A preparation of this kind, in the stump of a finger, was preserved in my anatomical collection, which is now in possession of the University of Cambridge. Professor Muller states, that his assistant Dr. Schann, was able to dissect filaments passing from one end of a divided nerve to the other in the frog. Also, it cannot be doubted that the sensibility of granulations is caused by the extension of nervous filaments into them.

I once had the digital nerve of my thumb divided by a wound. The sensation was not perfectly recovered for some years, but is now as complete as before the accident. I observed a curious fact on this occasion. I was aware, from the depth of the wound, that the nerve must have been divided, and I was surprized that the sensation was not instantly lost; but, while examining the part, the sense of feeling vanished, giving me the impression of a blast of air having passed from the thumb up my arm. This occurred in about two minutes after receiving the wound." 68.

B. *Muscular Tissue.*—Probably this is never perfectly restored in the higher classes of animals. The deficiency is commonly seen to be partially filled up by a pale substance, which appears to be coagulable lymph imperfectly organized.

C. *Fibrous Tissue.*—When *tendon* is divided, and afterwards united, it is by means of a newly-formed condensed substance, not possessing the true structure nor the brilliant metallic lustre of tendon, yet sufficiently strong to perform its offices. If tendinous structure do not unite, as in the laceration which occurs in a dislocation, the ends of the fibrous tissue form a number of tags or little bulbs, by the effusion of coagulable lymph; these become very hard, and finally smooth on the surface. It is said that the *dura mater* is not reproduced. A dense membrane, however, is formed, which answers a similar purpose. The only fibrous structure which is perfectly regenerated, is the *periosteum.*

D. *Cartilaginous Tissue.*—The *cartilages* covering the ends of bones, when destroyed, never appear to form again. In old persons, especially, the place of the cartilages of the joints is often supplied by the conversion of the osseous tissue into a substance possessing the density, hardness, and polished surface of china or white glass. Yet, in *false joints*, the ends of the bones that rub on each other become covered with a sort of spurious cartilage.

A vacancy in the cartilages of the larynx is filled up by a tough dense cellular substance. The cartilaginous portions of the ribs are not repro-

duced by genuine cartilage, and the union of these parts is often confirmed by being surrounded with a shell of bone

Dr. Macartney doubts whether the place of the fibro-cartilages is ever supplied, except by a tough cellular structure, not unlike common ligament, but wanting its brilliancy.

E. *Serous Tissue.*—This seems as perfectly restored as any tissue, saving, perhaps, the cellular.

F. *Cutaneous Tissue.*—Neither the skin nor mucous membrane appears to be perfectly restored. The vi lous surface is not regenerated.

G. *Arterial Tissue.*—The middle coat has not been observed to be rege nerated. The puncture of an artery is closed by condensed cellular membrane.

H. *Venous Tissue.*—"The proper tissue of the *veins* never grows again. I have always observed that veins on which venesection had been performed, presented on the inner surface a depressed line corresponding to the incision made with the lancet. The vacancy in veins being always closed by the cellular membrane somewhat condensed, accounts for those little pouches that are occasionally perceived over the vein, when the edges of the puncture have not been brought together after the operation of bleeding. These pouches are often seen, and sometimes of a large size, on the veins of horses, in consequence of the mode employed by farriers of pinning the edges of the wound, made in bleeding these animals, and the horse being allowed to stoop the head after the operation. There is no true venous tissue found in these pouches. 71.

I. *Osseous Tissue* is repaired by bone, in a manner that we need not specify. We regret that we have not space for Dr. Macartney's observations on necrosis. At a future opportunity we shall advert to them.

K. *Epidermoid Tissues.*—The reproduction of these, subjected to attrition, &c. as they are, is usually a process similar to that of their growth. But when the secreting apparatus is destroyed, the product cannot well be reproduced. Thus, when the capsules which contain the roots of the hairs are destroyed, the part continues bald.

"If the vascular surface which furnishes the horny substance of the nail, be completely destroyed, no new nail is usually formed; nevertheless, there appears to be sometimes a great disposition to the revival of the proper structure for secreting the nail. It reappears, in some cases, after caustic has been repeatedly applied to it, to prevent the reproduction of a nail which penetrates the skin. Two instances are recorded of a nail growing on the stump of an amputated finger; and I had a preparation of a finger, which had the last and a part of the second joint removed by amputation. The proper vascular structure had been produced on the stump, and a true horny nail generated; which, however, had a deformed appearance, and was very much hooked. This preparation is now with my collection placed in the University of Cambridge." 77.

As nail is only a modification of the horny or epidermoid tissue, we cannot be astonished at the occasional production of a modification of it. We say modification of it, for it is unlikely that perfect nail could be formed without a matrix. Dr. Macartney admits, that, in his case, the nail had a deformed appearance, and was very much hooked.

We arrive at the Chapter on the—

CONSTITUTIONAL OR REMOTE CAUSES OF INFLAMMATION.

This contains some ingenious hints mixed with much that must necessarily be familiar. We shall only pick out one or two insulated passages for notice.

a. Speaking of sympathetic morbid sensations, Dr. Macartney remarks:—"I remember a very curious instance, in which I discovered a stricture in the œsophagus, by the person feeling an acute pain in the little finger of the left hand every time he swallowed." 84.

b. It is well known that the suppression of natural secretions or of habitual discharges, may prove a cause of inflammation. The explanation generally consists in supposing that the blood or the system becomes charged with the peccant matter previously evacuated. But Dr. Macartney observes, that, generally speaking, the mischief occurs before there is time for the circulating fluid to become redundant, in consequence of even extensive secretions being interrupted; and in many cases, the discharge which it stopped, is so insignificant, as to quantity, as to be incapable of producing any influence on the mass of blood.

We must, therefore, he continues, adopt some other explanation for the suppression of secretion becoming the cause of inflammation, than the disturbance of the balance between the quantity of the circulating fluid, and that of the discharge which has been suspended. It is probable, that the interruption of the secreting function, in any one part of the arterial system, and especially on sentient surfaces, may, from the law of sympathy, which is so remarkable between the vascular system and these surfaces, become a direct motive to the arteries to assume, in certain places, an inflammatory state. This mode of explanation is rendered more probable, from the fact, that the removing very slight external irritation, or inflammations, which furnish very little or no pus, sometimes causes the most severe constitutional disturbance, which is removed by the recurrence of the local irritation.

We think there can be little doubt of the correctness of this explanation. It is not the mere suppression of discharge, but the alteration or repulsion of a mode of action that affects the system. Suppose some habitual vascular excitement or congestion in a given point. If that is suddenly repressed, some other part in the vascular circle, by the operation of the perplexing law of sympathy, becomes the seat of congestion or excitement. That vascular plethora is mixed up with this, seems however, to be proved, by the security which, under such circumstances, evacuant medicines offer.

"I have seen," says Dr. Macartney, "the most serious diseases endangering life, induced by the cure of that slight cutaneous affection of the cheek, which sometimes is a mere efflorescence, periodically throwing off a little furfur, or forming a crust. Dr. Jenner once shewed me a red spot on his wrist, that could be covered with a sixpence; he said, whenever it faded, his stomach and general feeling of health were affected." 87.

But in cases like Dr. Jenner's, it is more likely that the general disturbance was due to some modification of the state of the internal organs, than to the influence of so trivial a cutaneous eruption. The latter was in all probability a symptom. When present, it shewed a condition of internal organs

compatible with health. When a contrary condition of those organs ensued *it* subsided.

c. Dr. Macartney is eloquent on the subject of "taking cold." Of all parts of the body, he says, the back is the most susceptible of cold, thus insidiously applied, and the chilliness is sometimes even felt first along the back, although it may not have been the part immediately exposed. Perhaps this circumstance depends on the nerves of the skin of the back having so direct a communication with the spinal-marrow.

Dr. Macartney follows this up.

"In the same manner, when a person is placed in the situation favourable to giving cold, the danger may be avoided, by turning the face instead of the back to the direction of the stream of cold and damp air, observing the sensation caused by the impression, and voluntarily rousing himself to a feeling of resistance. In protecting the body by clothing, the back is the part chiefly to be regarded, and hence winter waistcoats should have the back made of at least as thick materials as the front. People commonly fall into the error of clothing the front of the body warmly, and expect to escape cold by muffling the throat. The Irish peasantry more wisely, expose the throat and breast, and defend the back by a warm great coat, which they seldom close in front." 89.

So that the idea of Pat's having "his coat buttoned behind to keep his belly warm" is a libel on him. He keeps his "belly warm," by not buttoning his coat at all.

The Local Causes of Inflammation form the subject of the next Chapter.

Dr. Macartney's observations are both numerous and judicious. But they are scarcely suited for our pages, containing, necessarily, much familiar matter. We may quote the following passage, with the expression of a hope rather than a confident expectation, that Dr. Macartney's ideas may not be of too sanguine a complexion. Speaking of the effects of dead animal matter introduced into the body or merely applied to the skin, he observes:—

"Every anatomical class has annually furnished examples of the effects of this species of infection, except the dissecting class of the Dublin University, during the time it was placed under my direction. Very simple means of prevention were employed, with so much success, that no severe disease from wounds received in dissection occurred, (when the proper means of prevention had been employed,) during the last fifteen years that I held the Professorship of Anatomy in that University. The means resorted to consisted in immediately washing the wounded part, and afterwards keeping it wet for a few hours, with a solution of alum in water. Most probably, any other fluid, such as the liquor plumbi, solution of sulphate of zinc, &c., which would have the effect of coagulating the animal substance, would answer quite as well; but the solution of alum was always at hand, and, I believe, if immediately applied, would never fail in preventing infection." 104.

Dr. Macartney remarks very justly, that the two stages of decomposition in the dead body, which render the animal substance most dangerous, are, that which takes place immediately after death, and the extreme degree of putrefaction. The latter is most apprehended, but, it usually occasions only a diffused inflammation in the part wounded, without any serious sympathy of the constitution.

Some dead animal substances, he goes on to say, are more likely to communicate this dangerous disease, than others. The brain, in the recently

dead body, is extremely apt to produce it, even when no wound is received. The sero purulent fluid, found in the large cavities after death, (if no means of prevention be employed,) seldom fails to infect persons; and the most dangerous animal fluid is that contained in the cavity of the abdomen, after puerperal peritonitis, or the serum found in parts which have suffered diffused or gangrenous inflammation. The white cancer of the liver, and the substance of medullary tumors, are found to be very irritating, when merely applied to the hands, without a breach of surface. Dr. Macartney has several times had his hands inflamed from handling this morbid structure, even after it had for some time been preserved in spirit.

"Some persons are more susceptible of the infection from dead animal matter than others. I have heard of a student who never escaped it, after receiving a wound in dissection I have, myself, so strong a tendency to be affected by the irritation of animal matter, that I formerly suffered more or less every year from this cause. Since, however, I adopted the means of prevention already mentioned, I never have experienced either local inflammation or constitutional illness, after wounds received in dissection. That there is no diminution of my susceptibility, is proved, by my still having red patches on my hands, which itch and smart, if I dissect a brain, without continually wetting my hands with the alum water." 107.

We have only twice suffered severely from handling dead bodies. It is singular that each time it was after examining a person who had died from scarlet fever, and in neither instance was there the slightest evidence of our having received a wound. On the second occasion the local symptoms were succeeded by a sort of erythematous affection of the throat, a true secondary symptom.

Dr. Macartney remarks that the secretions of the human body, when they are accumulated in foul clothes, occasionally produce a dangerous and obstinate inflammation of the hands of washerwomen. He has never seen this followed by more than common sympathetic fever. But ill-conditioned abscesses may occur, and the limb may even be lost. We have twice seen, in washerwomen, and after washing suspected linen, inflammation of the deep cellular membrane of the hand, diffusing itself along the fore-arm, beneath the annular ligament, and between the muscles. Each case proved fatal.

Dr. Macartney goes on to observe that:—The dead substance of other animals, besides that of the human subject, although less dangerous, is capable of infecting somewhat in the same way. Persons who clean tripes are liable to a peculiar erysipelatous inflammation, which passes up one finger and down another. The same has occurred from paunching a hare, and horse-killers occasionally suffer severe diffused inflammation. The fluids of the recently killed animal are, however, much less irritating, than the same in an advanced state of putrefaction, and hence butchers seldom are known to suffer from wounds received in the practice of their business; although, as already observed, the greatest power of infecting, belongs to animal substance immediately after death with respect to the human subject.

Dr. Macartney does not mention, at least in this place, any special treatment for this affection. Sir B. Brodie recommends the oxymuriate of mercury. We have, on several occasions, seen small doses of blue-pill with saline aperients, and the application of a strong goulard poultice, remove the affection in a day or two.

We proceed to the

Proximate Cause of Inflammation.

We must pass over the chapter on this subject. There is much in it, which if we discussed, we must dispute; and there is also much that is certainly ingenious and probably true. We must pass, too, over the succeeding Chapter on the Species of Inflammation, which contains nothing of consequence.

On Congestion as contra-distinguished from Inflammation.

It is obviously of great importance to distinguish during life or after death, the two pathological states of congestion and inflammation. Dr. Macartney devotes a short Chapter to the subject, and points out some criteria which he deems decisive.

Congestion, he rightly observes, belongs to the venous system. It is caused by any mechanical impediment to the free motion of the blood in the veins; such as obstruction to the circulation of the blood in the liver, the lungs, or other important organs, or by pressure on the trunk of any vein. It is also brought on by the suppression or diminution of natural secretions, and by supplying the body with more nutriment than is expended in growth or secretion. It is sometimes induced, and always favoured by dejection of mind and sedentary habits, which serve to accumulate the blood in the venous system, and to embarrass the circulation.

Every impediment to the passage of the blood through the small veins, necessarily renders its passage slow. But the blood appears to be also very fluid, at least it transudes in many cases through the coats of the veins into the neighbouring cellular membrane. The blood, in congestion, is either purple or still darker; in melæna, the blood poured out is black.

"The most remarkable circumstance, with respect to congestion, and the one which has not hitherto been described, is that arteries found in a congested part are smaller than their natural size." 140.

After a few other observations, Dr. Macartney goes on to remark:—

"In order to ascertain the direct effect of venous congestion, on the arteries of the part concerned, I made the following experiment: I put ligatures on both the jugular veins of the rabbit; the animal died apoplectic, and upon examining the state of the vessels of the ears, I found the veins which lie towards the outer edge of the ear, greatly enlarged, and gorged with dark blood; but the artery, which runs in the centre of the ear was reduced very much below its natural size, so that it appeared as a mere line. The result of this experiment made me wish to see what would be the instantaneous effect of arresting the venous circulation. I accordingly exposed the mesentery in a young rabbit, and having tied the trunks of several mesenteric veins, their corresponding arteries contracted immediately, in the most palpable manner, and to a very small size; as if taught by their organic instinct, that blood should not be permitted to go where it must immediately return.

From the description just given, congestion never should be confounded with inflammation. They are essentially different in all respects: the uniform and dark red colour of a part in a state of congestion, as contrasted with the brighter red colour, and distinctly ramified arteries in the inflammation ought at once be sufficient to point out the difference between these two affections." 141.

Dr. Macartney concludes by laying down the distinction between congestion and determination of blood.

When blood, he says, is sent in too great quantity to any part, it is because the arteries of that part dilate beyond their natural state, in consequence of some excitement of particular organs; and therefore the sensibility, temperature and bright red colour of the parts are increased: whereas in congestion neither the sensibility nor temperature is augmented. Determination of blood may itself be easily distinguished from inflammation, by the general appearance, by the causes, by the absence of any of the consequences of real inflammation, and especially by the want of the peculiar pain, which would belong to the tissue concerned, if its turgescence or fulness of blood had arisen from inflammatory action.

It appears to us, that determination of blood to an organ, is a state by no means accurately defined, or definable. If Dr. Macartney's account be correct, it is difficult to say in what determination of blood differs from the earlier stage of inflammation. Probably determination of blood is a state which may end either in inflammation or congestion, as concurrent circumstances may determine. The phenomena of several cerebral affections appear to point out a much closer connexion between the determination of blood and congestion than Dr. Macartney is willing to allow. We proceed to the last Chapter of the work, which treats :—

OF THE REMEDIES FOR INFLAMMATION.

Dr. Macartney classifies these remedies under the following heads :—

1st. Remedies which diminish the force of the heart, and give the disposition generally, to the small arteries to go into the contracted state.

2nd. Means that effect a diminished size of the arteries, or reduce the sensibility in the inflamed part.

3d. Medicines that augment or reproduce the natural secretions, and thereby abate the circulation, or lesson the effusions made into inflamed parts.

4th. Counter-irritations, secretions, or impressions made in different parts from those which are inflamed.

5th. Lotions or fluids which exert sedative and astringent power.

6th. Means for affecting in an agreeable manner, the sensation of inflamed parts.

7th. Causes which produce an easy or satisfied state of feeling, on the sentient surfaces, or in the individual.

Speaking of tartar emetic, Dr. Macartney professes himself unable to understand on what grounds, the very large doses of the medicine, now so fashionable, are prescribed. Small and frequent doses, he contends, are sufficient to produce all the effects that are desirable. If one grain of tartar emetic be dissolved in a pint of water, and a table-spoonful of this solution be administered every half-hour or hour, an extreme degree of nausea will certainly be excited, with a reduction in the strength and frequency of the pulse, and usually some perspiration. The good effects of nausea depend on its being kept steadily up for some time. But, as Dr. Macartney observes, preparations of antimony act on some peculiar constitutions as a mineral poison, producing an alarming degree of prostration and distress. He has

known these medicines also, when long continued, sometimes induce tenderness of the gums, an increased flow of saliva, and a cadaverous fœtor of the breath.

Cold Applications.—Dr. Macartney makes some good remarks upon these. The sudden application of cold induces a re-action. But it must be remembered that it is the sudden application of cold, *speedily withdrawn*, which does so. If the cold be maintained, there is no re-action. Dr. Macartney advises that the cold should never be suddenly applied, nor suddenly withdrawn. The inflamed part should be as it were seduced to surrender its temperature willingly, until the power of resistence or of reaction be past, and in carrying it back to the natural state, the same principal should be followed.

"The best example of the power of low temperature to cause contraction of the arteries, is seen in what is called *a dead finger*, in which, there is neither circulation nor feeling, a fact I had the opportunity of proving lately by a direct experiment on a person whose thumb was benumbed in this manner. On making a cut into it with a pair of scissors, no pain was felt, nor did any blood issue from the wound, until the sensibility and circulation returned: now, this extreme case never occurs in the most intense frost, but always when the atmosphere is damp, and not severely cold." 157.

We were not aware of the last-mentioned fact, nor does it seem consistent with what we hear of the effects of very low temperature. Our author believes that the remedial operation of a moderate degree of cold is in the majority of cases preferable. It is usually imperfectly attained by the evaporating lotions in common use. Dr. Macartney describes his ingenious method of obtaining, for the part, the uninterrupted operation of cold and moisture

"The most easy and manageable way of employing irrigation, is to place the limb of the patient in a trough, and having laid some lint on the inflamed part, to let the water be conducted by means of a stripe of wollen cloth, from a vessel holding the water or other fluid, which may be placed on a chair or table standing beside the bed. One end of the stripe is to be inserted into this vessel: the other, which should be cut into a pointed shape, laid on the lint. The water will then proceed in the manner of a syphon continually from the vessel, not by drops falling from a height, the sensation of which is disagreeable. The water is carried off by a tube proceeding from the end of the trough, into a vessel, placed at the end of the bed. I have found that a stripe of cloth of some breadth, where it is inserted into the water and ending in a point, where it touches the lint, answers the purpose of a syphon much better than the filaments of candle-wick, which some surgeons have employed. The patient with this apparatus is able to vary his position, which is a great comfort to him. It is obvious, that irrigation can only be used with convenience to the extremities. The water may have any degree of temperature that is desired, and if it should be wished to employ iced water, the vessel holding it may be placed at a distance from the patient's bed, or even outside the room, and conveyed by an elastic tube, on which there is a cock to regulate its admission into a smaller vessel, situate near to the bed." 159.

Our author goes on to state, that the mode of maintaining a continual accession or renewal of a fluid application, may be converted to many useful purposes. Professor Wiedleck has availed himself of it in the construction of his chair: in the back of which is placed a reservoir of fluid, from whence

a tube passes underneath the seat, to the front of the chair, where it is connected by a stop-cock with a catheter, which has been previously introduced into the bladder. This catheter is double internally, or has two passages, each with an opening into the bladder, and the handle of the instrument exhibits the two distinct tubes, into one of which, the end of the elastic tube which is furnished with a cock is introduced. The fluid from the reservoir is thus conveyed by one side of the catheter, and is returned by the other, and consequently there is a sort of stream carried through the bladder. He has used the apparatus for chronic inflammation and catarrh of the bladder. And Dr. Macartney has contrived a tube on the same plan, for transmitting a continued stream of fluid through the vagina or the rectum. Dr. M. has likewise invented a glass vessel, something like a cupping-glass, but larger, with two tubes entering it, one which admits the fluid near the top, and another near the bottom that allows it to escape. This vessel was designed for cleansing foul ulcers or cancers; but might be used for the purpose of abstracting the heat, by a stream of cold water, or for administering medicated fluids to external surfaces, if flat, in the same manner as the double canula conveys them to the internal cavities. And he has further proposed, that the principle of the double passage should be extended to the tube of the stomach-pump; by which, he thinks, the effects of the instrument would be rendered more certain and speedy.

Dr. Macartney particularly insists on not applying cold too suddenly, when we wish to get the lowering effects of cold. To obviate re-action, the temperature of the part should be gradually reduced. In all cases where hemorrhage is to be apprehended, the use of ice or iced water is most valuable, and may save the patient from the application of ligatures to small arteries. Dr. M. has treated cynanche tonsillaris by the frequent use of a gargle of iced water, with remarkable success. The disease has been by this means arrested in a few hours. He has also found ice effectual in stopping obstinate hiccup, when all other remedies had failed.

"Ice or iced water is better for the purpose of generating a great degree of cold, than any of the frigorific mixtures. Some of the latter would congeal the part, none of them would be proper with a raw surface, and it is rarely necessary to reduce the temperature in an extreme degree, without the existence of a wound. When they are proper it may be useful to know, that the mixture of five parts of muriate of ammonia, five parts of nitre, and sixteen parts of water, sinks the thermometer from 50° to 10°; equal parts of nitrate of ammonia and water reduce the temperature from 50° to 4°, and five parts of sulphate of soda, with four parts of diluted sulphuric acid, bring down the instrument from 50° to 3°." 161.

Moderate cold is generally suitable when the inflammation is not very violent, and is accompanied with heat. Irrigation with cold water, especially in the Summer months or in warm climates, is the most convenient mode of applying it. As a general rule, the feelings of the patient are a valuable test of the propriety of warm or cold applications.

Waiving the discussion of the effects of mercury, saline purg[illegible] and baths, we may pause and examine the operation of counter-irritant[illegible] e do so, because we are not quite certain that remedies of this description are always employed in a really scientific manner.

Counter-irritants are divisible into mere rubefacients—vesicants, or such

as give rise to secretion of serum or lymph, and sero-purulent fluid—applications which induce suppuration and ulceration, as tartar emetic—and applications which first destroy the skin and cellular membrane and give rise to suppuration afterwards, as the caustic potass, &c.

Dr. Macartney observes, that the milder counter-irritations are suited to diseases near to the surface, or which are situated opposite to the skin to which the application is made. The cautery or severe caustics are only justifiable, where the disease to be counteracted has a deep situation, and has a variety of interjacent structures, as in the hip disease and caries of the vertebræ.

He remarks that all counter-inflammations should be of a kind that naturally tend to subside. This is quite obvious. If any artificial inflammation, he adds, be carried so far, as to join or communicate with the original disease, it becomes mischievous; for, it is essential to the operation of any counter-irritation, that the parts placed between it and the internal disease, should be entirely free from inflammation, although they may be very thin, and consequently the two inflammations very near each other.

"If the inflammation from the previous disease, and that induced by the surgeon, be kept perfectly separate, although near each other, the influence of the latter is very considerable in diminishing the former: nevertheless, the original disease does not appear to possess any power over the counter-inflammation, either in diminishing or increasing it. This fact is difficult to explain; indeed, the mode of operation of any counter-irritation is very obscure: perhaps it is because the artificial disease being always disposed to cease or recover, creates the same tendency in the original inflammation." 166.

It does not appear to us that the difficulty is, theoretically, so great as Dr. Macartney represents it. Counter-irritation is principally used and useful for diseases characterised by increased vascular action and determination of blood. If we can set up an action and determination in contiguous vessels, it is easy to suppose that we may diminish the quantity of blood in those concerned in the disease, and consequently the diseased action itself. We see these variations in the balance of the circulation continually. A woman who is menstruating has generally a pallid face and a mottled complexion from the diminution of the vascular supply to the surface. The feet are cold when the cerebrum is oppressed with blood. The same state of the cerebrum is relieved by active purgatives, which determine the blood to the lower bowels. We might multiply instances of this sort, and follow out the argument more in detail; but we think we have said enough to render it probable that the action of counter-irritants is tolerably explicable on admitted principles.

"*Sinapisms* are counter-irritants of more value I believe than is generally supposed; the rapidity of their action is of importance, and the redness which remains on the skin for a considerable time, is an advantage, that does not belong to any of the milder kinds of counter-inflammations. From observing the good effects of blisters in gonorrhœa, gleet, and irritable bladder, I am disposed to think that sinapisms might be more useful in those diseases. I have found sinapisms very effectual in removing the inflammation of the tonsils in some cases." 167.

Of blisters, Dr. Macartney says that, in general, they are suffered to remain too long before they are cut, unless it be in persons with strong skin.

It is usually sufficient that the skin be inflamed, the serum will continue to flow at the first and second dressings. When it is designed to heal a blister soon, the water dressing should be used in place of any ointment. With some persons, he continues, blisters continue to form serum, and there is no tendency in them to heal. In one instance the blister remained open for weeks. In such cases the discharge is speedily stopped, and the blister healed, by sprinkling over its surface, a powder composed of equal parts of lapis calaminaris and cinchona, and using the water dressing over the part, to prevent the powder encrusting on it.

Dr. Macartney states that there is a plaster made by only one person in Paris, for maintaining a purulent discharge on a blistered surface, which is much preferable to savine cerate. It is paper on which there is a soft plaster very thinly spread; there are two kinds, one milder in its operation than the other, but they both keep up a secretion of pus, from a raw surface, apparently for any length of time, without inducing as much irritation as the savine cerate occasions in a few days. It is made and sold by *Mr. Albespeyres*, Rue du Faubourg St. Dennis No. 84, Paris. The composition of the plaster is a secret.

Such are the principal remarks which Dr. Macartney offers upon counter-irritants. We would obseverve that à priori it appears reasonable, and experience, we think, bears out the presumption, *that* the mode of counter-irritation should have a sort of physiological relation to the primitive morbid action. Thus, in diseases characterized by a tendency to effusion of serum and lymph, blisters are advantageous; inflammations of the serous and synovial membranes are examples of the fact. In chronic diseases, especially in such as are disposed to end in the formation of pus, those counter-irritants which produce a secretion of pus from the surface generally answer best; thus in ulceration of the cartilages of the joints and in caries of the vertebræ, setons or issues are preferable to blisters. In the slighter morbid actions which consist of determinations of blood, rubefacients are often sufficient. In the more sudden or severe determinations, which amount to inflammation, the positive abstraction of blood from the neighbourhood or the large vascular trunks is indispensably requisite. Without pushing this view, of the subject too far, we are justified in recommending it as a general principle of action, and in considering it far from useless.

Dr. Macartney proceeds to the *Different Medicated Lotions.*

He speaks very highly, and we cordially agree with him, of the dilute liquor plumbi subacetatis. The following, however, is a greater amount of success than we should have expected from it.

"The lead lotion never fails to cure tinea capitis, however long and obstinately the complaint might have resisted other remedies, provided the application of the lotion be properly conducted. The hair should first be cut close to the head, but need not be shaved off; water dressing or a poultice of any kind is then to be applied, merely for the purpose of cleansing the skin of the crusts, and all other impurities. There will then be seen under each crust, a red spot of the skin, denuded of its cuticle, and the villous surface exposed. The lotion should now be applied by means of lint thoroughly wetted with the fluid, and covered with a plate of Indian rubber, or a piece of oiled silk to prevent evaporation. Every time this dressing is changed, which should be very frequently at first, the head should be washed with some of the lotion, and the lint should be replaced

by some that is clean, which is to be completely wetted with the lotion, and covered as before." 173.

But the application must not be suspended for one night, nor even for a few hours; the crust will re-appear if it is so. We have often used the lead poultice for ezema of the scalp, but we cannot ourselves speak positively to its utility in genuine porrigo.

The next set of local remedies to which Dr. Macartney proceeds, is that which gives rise to *an agreeable state of feeling* in a part or in the whole of the body. The most powerful of these means is *steam;* Dr. Macartney describes a simple mode of applying it, for which we must refer to the work itself. The use of *water* at all temperatures is strongly advocated by our author, and the *water dressing*, already often alluded to, is his favourite method of employing it.

"The substance that I have generally made, the immediate object of application, is the finest and softest lint: and for the covering material either oiled silk or a thin plate of Indian rubber. Simple as this mode of dressing may appear, it requires to be managed with care, and attention to many circumstances, which would appear trivial, to persons unacquainted with the nature of the remedy. Two, three, or four layers of the lint should be first folded together, according to the size of the part to be covered, taking care also that the soft side of the lint is the outer one. In wetting the lint the first time it is necessary to either float it in the water before folding it, or if it be first folded, it should be pressed between the fingers, to urge the fluid into the interstices of the lint, which receive fluid with difficulty, until all the air they contain be expelled. The lint, when applied, should just contain as much water as not to drop. The oiled silk, or Indian rubber should project so much beyond the margin of the lint, as may prevent evaporation, which will vary according to the shape of the part on which the dressing is laid, and the thickness of the folded lint." 181.

The lint should be wetted, without any bandage, as that might rise to a feeling of constraint. It is, therefore, sometimes necessary to stitch the silk into a particular shape. As a general rule the lint should be changed three times during the day and twice during the night. In cases, where the inflammation is moderate, and the skin unbroken, the dressing will only require to be changed every twelve hours. At each time the dressing is renewed, the lint and oiled silk should be carefully washed, and when it is applied to ulcers, fresh lint should replace that taken off, the utmost cleanliness being of the first importance. French oiled silk is much superior to English, as it does not adhere to the skin. When it is desirable to combine cold with the water dressing, a bladder holding iced water may be laid over the oiled silk, or where the comfort of warmth may be required, the dressing may be covered with flannel.

Dr. Mncartney denounces poultices. It seems to us that he does them an injustice, when he declares that a poultice is made of materials, which, in a term far short of its renewal, become sour, and thereby render the poultice, after the first few hours, an irritating application. The greasy substances which are added to prevent the poultice adhering to the skin, do not always answer the end, and soon become rancid. A poultice favours the formation of pus, and causes a throbbing or pulsating pain, and a feeling of tenderness in the part, which are the natural attendants on the process of suppuration. It imbibes the pus it serves to create, and thereby becomes more irritating.

A poultice, before it is many hours on, is a mixture of sour farinaceous substance, rancid oil, and pus, oppressing the part by its weight, and beginning to adhere round its edges to the skin, creating a sense of constriction. In proportion to his dislike of poultices is his regard for water dressing. He speaks in the most laudatory terms of it. That he is well disposed to believe every thing in favour of it must be evident when he states *that* it puts *boils* completely under our control; *that* he has received numerous accounts of *gonorrhœa* being cured in one or two weeks by the external application of water to the penis; *that* it never fails to eradicate corns, *if* used long enough; *that* ganglia are removed, and loose cartilages, he thinks, may be so too, by it; *that* tetanus can hardly come on when it is employed. All these are confident opinions, and evince a very strong predilection for water dressing.

Dr. Macartney offers some very good observations on the effect of repose, proper position, change of air, exhilaration of mind, confident anticipations, and so forth. The following extract is curious.

"A new, and at first sight, a very singular mode of treating wounds and ulcers has been proposed by Dr. Jules Guyot. He published his views in the Archives Generales de Medicine, and afterwards he printed an extract from the Archives in the form of a pamphlet in 1835. The object of Dr. Guyot is simply to expose recent wounds of all descriptions, and ulcers, to hot and dry air, with the view of forcing a scab to form, by drying the clot and serum of a wound, or the pus of an ulcer. He made his first experiments on rabbits, on whom he inflicted several wounds, and afterwards placed the animals in a box having apertures, through which their heads projected The air contained in these chambers was heated by a spirit lamp, generally to 25° of Farenheit, and sometimes higher. The animals were secured so that they could not move. Their wounds wept at first serum, but as they dried, their edges approached each other. In some cases no tumefaction, nor appearance of inflammation was observed; in others suppuration took place after some days, underneath the crust; but by a longer exposure to the heated air, the pus thus formed, also dried ultimately into a thin scab. After it was removed, the wound was found to have been perfectly cicatrized underneath.

Dr. Guyot was not so successful in getting ulcers in the human subject to heal in this manner. After two or three weeks' trial, he was obliged in some cases to relinquish it, the patients not being able to bear the fatigue of having the limb so long confined to a box, without any change of position; nevertheless he did succeed in curing by the process of scabbing some ulcers of long standing and of an obstinate character, although pus formed again and again under the dried films which covered the ulcers. Dr. Guyot imputes great virtue to the heat, but it would seem to be merely instrumental to the drying of the serum, lymph, or pus which may happen to lie on the wounds or ulcers." 208.

We do not anticipate much from this. But we must quit Dr. Macartney. We think our readers will agree with us that much instruction and more pleasure may be derived from a perusal of Dr. Macartney's volume. That gentleman has the good wishes of all on his retirement from the lecturer's chair.

PHYSIOLOGICAL EXPLANATION OF THE BEAUTY OF FORM. By *Benjamin F. Joslyn*, M.D. Professor of Natural Philosophy and Lecturer on Anatomy and Physiology in the Union College, N. Y. 8vo. stitch'd, pp. 29.

THIS Lecture is a very ingenious attempt to explain beauty of form physiologically.

The explanation is based, as our author informs us, on the proposition, that the action of every muscle is attended with a sensation which is at first agreeable, but which, if the action is continued for a short time with intensity and without intermission, becomes painful. That there is pleasure attending those varied motions which depend upon the actions of different muscles in succession after intervals of rest in each, we know from our own consciousnes as well as from that instinctive propensity to play which we observe in children and young animals. That the prolonged action of a muscle is painful, we may readily convince ourselves by endeavouring to hold the arm for some time at right angles with the erect trunk. With the arm in this position, a pound weight on the hand or even the weight of the arm itself becomes in a few minutes almost insupportable. We presently begin to feel pain in the shoulder and anterior part of the arm, the former from fatigue of those muscles which originate from the scapula and keep the os humeri elevated, and the latter from fatigue of the muscles which originate from the scapula and os humeri, whose muscular fibres are in front of the os humeri, and by their contraction elevate the fore arm in consequence of their tendinous attachments to its bones. Yet a man may labor all day with his arms without this painful sensation; because a muscle requires but momentary rest, in order to regain that degree of energy which is momentarily lost by action.

Thus a muscle may be considered as having a simple action, which cannot be sustained with uniformity a minute of time without actual pain, nor a second of time with positive pleasure. Of course this is speaking off book. But to express the law in more general terms, as we diminish the duration of a muscle's action we diminish the pain until we arrive at an action whose attendant sensation is neutral, *i. e.* neither painful nor pleasurable; as soon as we have passed that point and have begun to execute motions a little more transient, the attendant sensation becomes positively pleasurable, and the pleasure increases as the separate actions become more transient.

Of the general correctness of this principle we think that there cannot be any doubt. We proceed to its application to the solution of Beauty of Form.

It needs no argument to show that our ideas of form are obtained from the operation of two senses—touch and sight. Part of the sensations which we refer to each result from the muscular sense, that is from the sensation of action in those muscles employed in the apparatus of each.

Observe, for example the determination of the form of a solid by the eye. The solid is bounded by lines.

For examining the form of a line, as well as that of the outlines of any other object, it is necessary to direct the optic axis to its different points in

succession; this is always done in a first and critical inspection, and in many instances in which we are unconscious of the motion. Hence, as the actions of the four muscles situated respectively at the lower, outer, upper and inner parts of the eye, effect all its voluntary motions, it is essential in determining by the eye, the form of a line, that one or more of these muscles shall direct the axis successively to its different points.

In the ordinary state of the muscular system, and within certain limits, the motion of the eye in any direction is pleasurable, as compared with that inaction of the muscles attending indolent vision in a fixed direction, or with that incessant and equal, but not necessarily energetic action of them all, requisite for the preservation of their equilibrium during the accurate and prolonged inspection of a minute dot whose figure is inappreciable. Thus the tracing of a line will, to a certain extent and for a certain time, afford some degree of positive pleasure; in other words any short line will possess some degree of positive beauty. But a point awakens no such emotion, and can possess no beauty.

"When the head is erect, in examining a *straight horizontal* line we employ one of the lateral recti; if the line be vertical we employ the rectus inferior or superior. In either case, but one muscle acts, and that continuously. The muscle is not relieved, and its action is not attended with the maximum amount of pleasurable sensation. When the vision has been extended along the whole line, if we then immediately proceed to examine it in the opposite direction the opposite rectus must at once exert a force sufficient to overcome the *momentum* of the eye-ball, and then exert a *continuous* action. Both these circumstances are unfavourable to pleasure. If the line is *oblique*, one lateral together with one inferior or one superior muscle is exerted, and the same principles which have been applied to the single muscles, apply to the muscles acting in pairs; the muscles of each pair acting simultaneously and continuously, and being, in the case of repeated examinations, opposed by the momentum of the eye, or in other words, the *inertia* of the eye-ball in motion. Oblique lines should be rather more agreeable than vertical or horizontal ones, as two muscles act together. The fact of the superior beauty of lines inclined to the vertical, so far from being explained, has not, perhaps, been stated. From the physiological theory, we should not expect to observe the same difference between them as between any straight line and a regular curve; for the occasional repose of a muscle conduces more to its relief than the simultaneous and uniform co-operation of *another* muscle; and the advantage which an oblique line has over a horizontal one in regard to intrinsic beauty, is in numerous instances compensated by extrinsic relations." 14.

It may readily be imagined how, by this hypothesis, curved lines are beautiful. In viewing a regular curve, no muscle of the eye-ball acts continuously and uniformly, but enjoys partial relief by remissions, or total relief by intermissions of its action; and the regularity of these remissions and intermissions, as well as the equal distribution of exercise, is promoted by the regularity of the curve. Acting in succession, the muscles afford mutual relief after actions of short duration and variable intensity, as to afford positive pleasure; and in this *muscular pleasure* of the eye consists the *beauty of configuration.*

"The successive and accurate survey of distant points is not however invariably requisite to a degree of similar pleasure, in viewing a figure of such small angular extent as to be instantly recognized by one location of its image, as analogous to a larger one whose survey has directly afforded muscular pleasure.

Although I thus recognize the influence of association, the facts of this very case afford an interesting confirmation of the physiological theory; for a large circle or ellipse is more beautiful than one of diminutive size. The beauty of the one is original, its influence is direct; the beauty of the other is in part borrowed, and this part is weakened by reflection. Or to express it more literally, the one excites a pleasurable sensation, the other suggests a similar idea; the one affords a *perception*, the other a *conception* of beauty. Such, even with similar color and brilliancy, would be the difference between the full moon and a circular dot (·) or period; such the difference between a rainbow and a diminutive arc (⌒), a short accent inverted. Here the critic might be inclined to charge us with confounding the beautiful with the sublime. But the fact is, that criticism has constructed the sublime—as it has the beautiful—from heterogeneous materials, one of which is identical with one of the elements of beauty, and should in a physiological arrangement, be referred to the same class. In many instances a magnifying instrument will disclose minute irregularities and blemishes; but in every other case, physiology would show, that within certain limits, to magnify a beautiful *object* is to *magnify beauty*." 16.

We need not enter on the analysis of the beauty of different curved lines. But before we close this notice, we may direct attention to Dr. Joslyn's account of the "Principle of Symmetry." He considers it under the heads of 1st, geometrical symmetry, or symmetry of form; 2nd, of symmetry of position.

Symmetry of form, he says, though implied in geometrical regularity is not identical with it, and requires, a separate consideration. The beauty of forms geometrically symmetrical, in contradistinction from those deficient in the correspondence of opposite halves, depends upon two similar series of actions in different pairs of muscles. For example, the survey of an ovate leaf, or indeed that of almost any vegetable leaf,—so numerous are the provisions for our gratification—requires for its opposite halves two series of muscular actions, the different parts of the one corresponding with those of the other in duration, intensity and order of succession. The gratification in this case results from the harmony of muscular sensations individually pleasurable. The agreeableness of this harmony may depend upon a principle more psychological than that of the agreeableness of its elementary sensations. Yet the former is to a certain extent susceptible of a physiological generalization.

Dr. Joslyn offers some further observations upon this head, but we do not consider it necessary to follow him. Nor can we accompany him in his examination of the *symmetry of position*. His remarks on the final cause of this power in the human eye to appreciate beauty of form are sensible, and, being brief, may be quoted.

"The benevolence of the Author of Nature is strikingly manifested in connecting present pleasure with obedience to the natural laws. It has been shown that vision is attended with muscular action which is generally pleasurable. If seeing had required no muscular action, we should have wanted one of our present stimuli to the acquisition of knowledge. This stimulus is especially necessary in infacy, and then powerfully prompts to observation, even anterior to the dawnings of intellectual curiosity, with which it subsequently co-operates. We see, in this arrangement, the exemplification of a principle which extensively pervades the laws under which we are placed by the Creator—which is, that mental attainments, as well as other acquisitions, shall require action; and that action shall be attended with pleasure. Whether the acq[illegible]

by the manual labor of the artizan, by the manipulations of the artist, the chemist or the experimental philosopher, by the sedentary student of books, or by the observer of natural phenomena in his original survey of the universe, in every case it is muscular action." 26.

And, after pointing out the regular, curved, and symmetrical objects, and motions in which Nature delights, he adds:—

"All this beauty had been lost to man, but for a property of the eye, which, on a superficial reflection, might seem a defect. It is no less true than paradoxical, that the perception of these beauties depends on *indistinctness of vision.* To a being so constituted as to see with equal distinctness by oblique and direct vision, the same forms might be presented, but not as forms of beauty. Has the Creator, then, sacrificed a portion of our perceptive powers to our sensual gratification? I answer no. Has he, then, sacrificed a portion of our *direct* means of acquiring knowledge, to afford an incitement which should ultimately and indirectly enhance our attainments? Again I am compelled to answer in the negative. There is, in this arrangement, no intellectual sacrifice whatever, direct or indirect. This indistinctness of oblique vision, which might seem a defect, I consider an excellence. A simultaneous and distinct impression received from the whole field of vision, would distract the attention and preclude a minute and accurate examination of any particular part. But as our eyes are so constituted as to receive a strong and distinct impression only from the images of those objects toward which their axes are directed, and as our minds are so constituted that we can in a great measure neglect the weaker or less distinct impressions, we are able to acquire a more exact knowledge of any part of the field to which we choose to attend. To see every thing at once, would be to examine nothing. Such a constitution of the eye would be to vision what an indiscriminating memory is to the understanding." 28.

There is certainly great ingenuity, and probably much truth in the preceding views. We will not say that the explanation of Dr. Joslyn meets the whole case, nor are we convinced that the mind deserves to be excluded, so much as it is, from the determination of beauty of form. But we have selected the more prominent portions of Dr. Joslyn's argument, and laid them before our readers undiluted with comments of our own. Dr. Joslyn is evidently a very observant and a very intelligent man.

THE THIRD FASCICULUS OF ANATOMICAL DRAWINGS, SELECTED FROM THE COLLECTION OF MORBID ANATOMY IN THE ARMY MEDICAL MUSUEM AT CHATHAM. Drawn on stone by *Waterhouse Hawkins.* London, 1838.

THE Army Medical Museum at Chatham has become celebrated as a collection of morbid preparations. Many have visited, and all, who can, should visit it. The zeal displayed in its formation, and the care and talent exhibited in the display of the specimens, have won golden opinions from all competent judges.

But the anxiety of the Medical Department of the Army to encourage pathological science has not stopped at the construction of a museum. To render its stores as available as possible to medicine, drawings of the more remarkable preparations have been published, and the present is the Third Fasciculus of this valuable work.

We are informed in the Preface that, since the publication of the last Fasciculus, in 1834, the anatomical collections belonging to the museum have continued increasing in magnitude and value. The number of preparations at present is as follows:—Of Morbid Anatomy 2316—Of Healthy Anatomy 685—Of Comparative Anatomy 740—Of Experimental Physiology 100.

Government has granted additional room, and the reporters hope that the future progress of the museum will be even greater than the past. The reporters remark, that:—

Many instances are given of lesions, which were not suspected during life, and were yet doubtless of long standing. These and other analogous facts, are strongly indicative of the difficulties and imperfections of the diagnostic part of medicine; and how careful and vigilant the medical officer should be in examining men brought before him with obscure ailments, and vague complaints, lest he overlook serious organic disease, and unjustly condemn men of "malingering."

The imperfection of diagnosis referred to may be considered as dependent on imperfection of observation, to be corrected only by increased attention, directed by precise knowledge, to doubtful points, and aided whenever available by improved methods of scrutiny. Thus probably, many latent diseases may be detected; as disease of the investing cartilages of joints, by the sensation of roughness imparted to the touch of the examiner, as pointed out by Mr. Gulliver;* as disease of arteries, and probably aneurysms in very many cases, by loss of the pulse in some one or other of the larger arteries; not to mention obscure affections of the heart and arteries, for the detection of which we possess invaluable aids in auscultation and percussion.

By the results of researches, bringing to light the obscure and latent organic changes to which so many textures of the body are liable, pathological anatomy is intimately connected with practical medicine, and is brought to bear even on the inspection of recruits and invalids, imparting, it may be said, new power of discrimination to the examining officers. How invaluable then, in this point of view, as well as innumerable others, is a museum, in which the results as exemplified in the injured parts, are stored up and systematically arranged for examination and reference; and how deserving is it of the continued support of the department to which it belongs and of the patronage of Government, merely in relation to its usefulness in connexion with the public service!

A few subjects selected from the division of Experimental Physiology have been included in this Fasciculus. This is a department in which, perhaps, much is yet to be done. We cannot join in the indiscriminate condemnation of what is calculated to give exactness to our view of the œconomy. Cruelty has no doubt been exercised, but that should be, and might be, in a great measure, avoided; and when millions are slaughtered to stimulate the sensualist's cloyed appetite, a few victims may surely be offered to science and the general interests of humanity.

We are glad to learn that:—

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* Edinburgh Med. and Surg. Journal, Vol. xlviii.

"It may here be stated, that the Director General, having three years ago obtained the sanction of the Secretary at War, for making a digest from the valuable records in the Office, of the History of the Diseases of the Army for the last twenty years, considerable progress has been made in this Work by the Officers employed on it, viz. Deputy Inspector General Marshall, Captain Tulloch, and Dr. Balfour, Staff Assistant Surgeon, and that Lord Howick has further ordered that the First Volume, which includes the West India Islands, be printed immediately. The Second Volume, which will include St. Helena, the Cape of Good Hope, and Ceylon, is likewise in progress; and Volumes will follow which give India, North America, the Mauritius, Western Africa, &c. Those valuable Records which give the Observations and Reports of the Medical Officers of the Army in every quarter of the World, where a British Soldier is stationed, are enriched by Statistical Statements of great interest by Captain Tulloch, extracted from the Reports and Returns in the Offices of the Army Medical Department and War Office."—*Pref.*

The Fasciculus before us contains ten lithographic plates, beautifully executed.

PLATE I. represents a species of organic disease of the liver, of an obscure kind, and as it is believed, not yet described; secondly, a bony growth in the substance of the organ; and thirdly, a communication through the diaphragm between an abscess in the liver and the lung.

The peculiar disease of the liver would seem to consist of numerous well-defined excavations, probably formed by the softening and breaking down of a peculiar tubercular matter. In the portions Nos. 1 and 2, there is both internally and externally a tubercular appearance. In No. 3 there is no such appearance, excepting partially in one cavity; the surface is smooth, and the internal substance apparently homogeneous.

PLATE II. represents first, the liver and gall-bladder, infested with lumbrici (ascaris lumbricoides); secondly, the gall-bladder, containing calculi; thirdly, the gall-bladder ulcerated; and lastly, an enlarged biliary duct.

Fig. I. represents the right lobe of the liver, the gall-bladder, and a portion of the duodenum of a Maltese boy, aged 2 years, who died with symptoms of dysentery. The stomach, duodenum, the gall-bladder and biliary ducts contained lumbrici. The common duct and gall-bladder were greatly distended with them; and in some places they had penetrated through the ducts and the substance of the liver into the cavity of the abdomen. The trichocephalus dispars equally abounded in the cæcum.

PLATE III. represents perforations of the pleura, from ulcerations connected with tubercular excavations, commonly giving rise to pneumothorax.

Fig. I. exhibits the left lung, with a portion of costal pleura. A small perforation is seen on the surface of the lung, near its apex. The whole extent of the pleura is lined with coagulated lymph, and the lung is very much compressed. From the body of P. Calmon aged 28 years, who died of tubercular consumption, complicated with empyema and pneumo-thorax, the former following hydrothorax. He was sent home from Jamaica on account of phthisical symptoms and hæmoptysis after a fall. In the General Hospital at Fort Pitt pneumothorax suddenly occurred, consequent on a

violent fit of coughing. The operation of tapping his chest was performed with a trochar attached to a flaccid bladder. The air thus collected was found by a measure to be composed of—7 carbonic acid gas, 93 azote=100 Great relief followed the operation. About a month after a second operation was required for hydrothorax. Life was protracted about three months, with comparatively little suffering.

In a case in which the operation was not performed, the air contained in the right pleura was found by Dr. Davy to be composed of 13 carbonic acid gas—87 azote=100.

The operation was performed in another case. A large quantity of air escaped, and immediate relief followed. The patient lived in comparative ease for a fortnight.

PLATE IV, represents, first, an instance of popliteal aneurysm, for which the usual operation failed of success, in consequence of free anastomoses between the arteria profunda and the femoral artery; secondly, true aneurysm accompanied with ossification; and, thirdly, a false aneurysm, in the sac of which there was a bony deposit in the clot.

Fig. 3, displays a small aneurysm at the commencement of the aorta containing a clot, in which is a distinct osseous deposit. The bony matter in the clot does not appear to have any connexion with the coats of the vessel. From an analysis made by Dr. Davy the bony deposit appears to consist of phosphate of lime, animal matter, a little carbonate of lime, and a trace of sulphate of lime.

Fig. 4, shews a popliteal aneurysm, for which the femoral artery was tied, and which became obliterated about four inches below the crural arch. Coarse injection has been thrown into the vessel, and has penetrated freely into the whole of the femoral and the posterior tibial arteries. The anastomosing branches connecting the vessel above and below the ligature, are of large size, particularly the perforating branches of the arteria profunda: the sac accordingly has not been diminished in size by the operation.

PLATE V. represents obstructions and obliteration of arteries, connected with aneurysm.

In this plate we have, among others, instances of obliteration of the cavity of the arteria innominata and of the left carotid arteries at their origin—of obliteration of the arteria innominata only—and of obliteration of the left carotid only.

Fig. 3, exhibits aneurysm of the arch of the aorta, with complete obliteration of the arteria innominata, and of the left carotid artery at their origin, The orifice of the left subclavian artery is diminished, but perfectly pervious. From G. Sellars, æt. 34, 38th Regiment, a man of dissolute habits, 18 years service in India. He was admitted into the General Hospital, at Fort Pitt, with anasarca of the lower limbs, and great difficulty of breathing; a sense of weight in the chest, with inability to lie down; which symptoms, he said, commenced four months previously, with pains at the root of the neck and betwixt the shoulders. He had been seven different times in hospital with rheumatism during the two years preceding his death. The pulse at the right wrist was not perceptible for the last two or three months of his

life. He died suddenly on the eighth day after his admission into the General Hospital, without apparent suffering.

The aneurysm was found to have burst into the pericardium. The tumor contained a large fibrinous clot, and some of the veins proceeding to the superior cava were obliterated by pressure. Two pints and three-quarters of serous fluid were contained in the left pleura, one and three-quarters in the right, and a considerable quantity in the abdomen.

Fig. 4. shews an aneurysm of the arch of the aorta, with complete obliteration of the arteria innominata at its origin. There was no pulsation perceptible either in the right carotid or brachial artery for some time previous to his death; but in those of the left side the pulsation was natural. The patient died after protracted dyspnœa, without rupture of the aneurysm.

In another case of aneurysm of the arch of the aorta, occasioning complete obliteration of the left carotid, the patient died without rupture of the sac.

PLATE VI. represents, first, obliteration of arteries from thickening of inner coat; secondly, from the formation of a coagulum, unconnected with aneurysm; thirdly a closure of a principal branch of the pulmonary artery, from the presure of a small aneurysm of the aorta at its origin; fourthly, an ossified state of the ductus arteriosus in a child; and, lastly, different stages of a wounded artery in process of healing.

Fig. 1. exhibits complete obliteration of the left common iliac artery, and nearly perfect closure of the right internal iliac at its origin, The coats of the vessels are diseased, the outer thickened and condensed, the middle atrophied, the inner irregularly thickened and partially ossified. From a very robust man of the 95th Regiment, who died suddenly of pulmonary ecchymosis. The disease of the vessels produced no inconvenience during life, nor was it ever suspected. The coats of the aorta were more or less similarly affected.

Fig. 2, exhibits complete closure of the left carotid and subclavian arteries, apparently by coagulable lymph, to the extent of about an inch, beyond which they were not examined. The inner coat of the aorta is irregularly thickened in a slight degree, and presents several osseous deposits. The other coats are rather atrophied. From Hector M'Cullum, aged 36, a drummer of intemperate habits, twenty-two years in the service. A year previous to his death he became subject to dyspnœa, which gradually became very distressing. For the last two or three months no pulsation could be felt at either wrist, and during the last fortnight there was no pulsation of the left carotid, and very indistinct of the right. The arteria innominata was probably ultimately closed; this was not determined, the *post-mortem* examination having been conducted in a very hurried manner, owing to interruption.

The arch of the aorta was found slightly enlarged; the heart and its valves pretty natural: there were two pints of serum in the left pleura, and three in the right.

Fig. 5, The right pulmonary artery completely closed at its origin by the pressure of a small aneurysm arising from the concavity of the aorta, near to its base, the closure was permanent from adhesion. The inner coat of pulmonary artery contiguous had lost its natural smoothness. From Cor-

poral Sherron, æt. 33, who died of pulmonary phthisis. The disease of the vessels was never suspected during life, the symptoms being only those of ordinary phthisis.

PLATE VII. represents, first, hypertrophy and atrophy, with softening of the articular cartilages in instances of pulmonary consumption; secondly, of atrophy unconnected with this disease in the middle period of life; and, thirdly, of atrophy in old age.

The affections represented in this plate are interesting, but we must refer our readers to the plate itself.

PLATE VIII. represents the effects of encephaloid disease in different bones of the same subject.

T. Ward, aged 24, 29th Regiment, had been long under treatment for chronic rheumatism and pains affecting different parts of the body. The symptoms appear to have been very indefinite and obscure. After many months suffering he became extremely emaciated and bed-ridden; and died with diarrhœa twelve months after his admission into the General Hospital. *Fig.* 1, shews the pelvis, which is very fragile and light, with many large excavations in the cancellous texture of its different bones. The left os pubis and part of the right ilium are completely destroyed. In the recent state the deficient parts were filled with encephaloid matter, which in some situations formed tumors. *Fig.* 2, exhibits two of the lumbar vertebræ. Their osseous tissue, like that of the pelvis, is very fragile, light, soft and expanded. When recent, the interstices were occupied by brain-like matter. *Fig.* 3, a portion of one of the ribs. Its texture is much rarified, with numerous openings into the cancelli; bony laminæ have grown from its surface.

PLATE IX. represents, first, fractures reunited after a definite time, illustrative of the process of reparation; secondly, membrane containing a deposit of bone, with the same view; thirdly, a fracture, with displacement of vertebræ, bearing on a practical point; and, lastly, fracture of the patella, the results of experiments on animals, in illustration of the peculiarities of the process of reparation in this lesion.

The only point we think it necessary to notice is shewn by *Fig.* 5, that of parietal bones, from which a large portion of the entire thickness has exfoliated. The deficiency is filled up by membranous matter; and there has been an attempt at reparation by the formation of small osseous plates in the membrane, quite detached from the old bone.

This drawing illustrates the formation of new bone at a distance from the old bone, a fact at variance with the opinion of Haller and Dethleef. The accidental callus in the rabbit's tibia is another example of new bone, formed quite independently of the vessels of the old bone.

From William Hall, 16th Light Dragoons, who had lost his palate bones and penis, from syphilitic disease of two years' duration. He had been several times salivated.

PLATE X. represents, first, some of the leading phenomena of necrosis, the results of experiments on animals, by Mr. Gulliver; secondly, examples of necrosis from the human subject, exhibiting certain peculiarities, &c.,

thirdly, the results of experiments showing the adhesion of dead to living bone, and that there is no absorption of the former when placed amongst living parts.

We shall not specifically allude to the figures in this plate, as we have fully noticed a paper on necrosis by Mr. Gulliver, in our present number.

Our readers may guess from the facts we have quoted the value of this Fasciculus, and the still greater value of the museum from which its drawings have been taken. We wish success to both.

PRACTICAL REMARKS ON THE DISEASES OF THE SKIN, ON THE EXTERNAL SIGNS OF DISORDER, AND ON THE CONSTITUTIONAL PECULIARITIES DURING INFANCY AND CHILDHOOD. By *Walter C. Dendy*, Surgeon to the Royal Infirmary for Children, &c. 8vo. pp. 153. 1838.

Mr. DENDY, a very zealous and intelligent member of our profession, offers in his Preface, the following reasons for the publication of the present work.

"In medical literature, a profusion of opinions or arguments detracts from this facility, by too often leaving the adoption of practical modes to the reluctant decision of the reader—the very profusion thus limiting the sphere of utility. I have therefore endeavoured, here, to improve the remarks in my former work on these subjects; to present a book, not of argument, but of practical precepts, founded on long observation; a volume for reference, rather than of elaborate study."

The cutaneous pathology of the treatise essentially regards the diseases, as they occur in childhood. Mr. Dendy has deservedly enjoyed much experience in the complaints incidental to this period of life. We shall therefore select such passages as may offer, on several points, its results.

1. *On the External Signs of Internal Disorder.*—We find some observations on this head, some of which are neither uninteresting, nor uninstructive. And first of the expression of *feature*. Mr. Dendy observes:—

In the progress of hooping-cough, the eye should be attentively regarded. While the disease is confined to the organs of breathing, the eye will be little influenced, except in the redness subsequent to a paroxysm of cough; but we may almost decide if the brain be about to participate, according to the *fixed* contraction or dilatation of the pupil.

Strabismus suddenly taking place, in connexion with other symptoms, is an indication of danger. Its *gradual* and *unattended* progress may arise from mere irritation from worms or other slight disorders of the bowels, or from rays of light constantly falling on the eye from one direction.

Contraction of the pupil to a minute point, with the eye half closed, a red streaked condition of the conjunctiva, with frowning or knitting of the brows, with spasm of the muscles of the globe; this combination unequivocally marks that condition which will rapidly become inflammation of the membranes of the brain, the first stage of *acute hydrocephalus*.

Mr. D. believes that the spasm of the globe indicates the presence of arachnitis, and that about the base of the brain.

When the eyeball is fixed and drawn up under the lid, the pupil widely dilating and contracting, the eye being bright and glassy, we may often anticipate, if not averted, convulsion or infantile epilepsy. Inequality of action of the pupil on exposure to the light is dangerous.

Any peculiar movement, continues, Mr. D., about the nose and lips indicates disorder about the chest and abdomen.

If there be impediment to the transmission of air through the lungs, the nose will be drawn in during respiration; the mouth being unusually open, and the lips often puckered, and of a livid hue.

When the nose and upper lip are tumefied, there is irritation of the bowels, probably arising from the presence of worms.

If the inside of the nose be dry, and the lips pale and cracked, our attention should be immediately paid to the condition of the head. And when we see frequent spasm of the lower jaw, we may then anticipate that the base of the brain is threatened.

The movements of the limbs furnish indications of disease. There is in pleuritis, for instance, observes Mr. Dendy, often a doubling up of the body to relieve tension, and the legs are *forcibly* drawn up towards the belly, when inflammation of the serous or mucous membranes of the lower bowels is present. If *one* limb, however, is unusually quiet, or is moved by sudden jerks, that is probably the *seat* of pain.

"As early as the fifth or sixth day, infants will sometimes be attacked by spasms in the muscles of the face, lower jaw, or neck, and in severe cases we have seen the jaw completely fixed. This is often, I believe, the effect of retention of meconium, or extending ulceration of the umbilical cord.

Convulsion will arise also from painful dentition, when it is often attended by swelling of the head and feet, from acidity in the bowels, and the effort to throw out eruptive diseases on the skin. The legs are then often rigidly extended during sleep, these effects subsiding when the eruption has appeared. A contraction of the thumbs, fingers, and toes (carpo-pædal spasm) is often the premonitory sign of more severe convulsion, and opisthotonos, the attendant of that form of cerebral irritation marked by *crowing*." 13.

In older children, he continues, an uplifted step, a staggering gait, and a rocking of the legs, often indicate that species of hydrocephalus which occurs without *acute* disorder; and if they waver much from side to side, the medulla oblongata is usually affected.

After some remarks on the indications offered by the voice, by altered states of respiration, (in which he includes the "laryngismus stridulus,") Mr. D. sums up with the following brief observation:—

When a cough assumes the *spasmodic* character, it is usually a mark of cerebral affection, as cough with *mucous expectoration* is of pulmonary or bronchial, and a dry and *irritative* cough of gastric disorder.

To proceed to the Diseases of the Skin, Mr. Dendy sets out with two classifications—one, of these diseases according to their character—the pustular, the scaly, and so on; the other, of the diseases according to their causes. Could such an arrangement be rendered unobjectionable, it must be a highly useful one, for it would present at one view both a philosophical classification of diseases, and one which would point directly to remedial means. We present Mr. Dendy's, and shall offer a remark or two upon it.

ARRANGEMENT ACCORDING TO CAUSES.

- **Diseases symptomatic chiefly of disorder of the alimentary canal, marked by *increased* cutaneous action, often by subacute or chronic inflammation.**
  - Occurring during dention or suckling . .
    - Strophulus.
    - Lichen.
    - Prurigo.
    - Crusta lactea.
    - Impetigo.
  - Dependent chiefly on gastro-enteric irritation.
    - Roseola.
    - Erythema.
    - Eczema.
    - Urticaria.
    - Erysipelas.
    - Phlegmon.
    - Herpes.
    - Lepra.
    - Psoriasis.
    - Crinones.
    - Verruca follicularis.
    - Acne.
    - Sycosis.
    - Porrigo.
- **Diseases indicative of debility, marked by *languid* cutaneous action, often the sequelæ of acute disorder.**
  - Original debility of the system . . . . .
    - Pityriasis.
    - Icthyosis.
    - Elephantiasis.
    - Alopecia.
    - Shrivelled skin.
    - Ephidrosis.
  - Derangement of the chylopoietic function.
    - Apthæ.
    - Miliaria.
    - Ecthyma.
    - Rupia.
    - Pemphigus.
    - Anthracion.
    - Anthrax.
    - Purpura.
    - Nomé.
    - Struma.
    - Onychia maligna.
    - Chloasma.
- **Diseases consequent to specific infection.**
  - Febrile . . .
    - Rubeola.
    - Scarlatina.
    - Varicella.
    - Variola.
  - Non-febrile. . . .
    - Vaccinia.
    - Scabies.
    - Syphilides.

Diseases consequent to external and common irritation.	. . . . .	Encausis. Vesication from external irritants. Pernio. Paronychia. Pterygion. Verruca. Clavus. Intertrigo. Rhaghades. Condyloma.
Maculæ		Nævus vascularis. Lentigo. Tinge of Argenti Nitras." xii.

The two great classes are the first and second. We confess that the allocation of particular affections appears to us, in many instances, extremely arbitrary. Thus, in the same category, we find roseola and sycosis, erythema and phlegmon, acne and lepra. All these are said to depend chiefly on gastro-enteric irritation. But why should lepra be referred to such irritation rather than strophulus, or impetigo? And why should pityriasis be attributed to original debility of the system, rather than psoriasis? This arrangement of diseases of the skin refers all to the interior. Peculiarities of the structure of the skin go for nothing. This appears to us as fatal an error as referring all to the skin itself, and nothing to the system. The skin is a very extensive, highly organized, and powerful secreting organ. It is exposed particularly to the causes of disease. Why should not disease originate in *it* sponte suâ. A priori, it is likely that it would do so, and experience, we think, corroborates this view. The mucous membranes, the glands, are, after all, but internal integuments. If, in a large number of cases, cutaneous complaints have their source in derangements of the interior, in a large number, also, they depend on a vicious conformation or disturbance of the dermoid tissue itself. A dry skin is the fruitful cause of eruptions. That dryness is often combined with general or with internal derangements—but in many cases, there is no evidence in favour of its being so.

But arrangements of cutaneous diseases are notoriously beset with difficulties. It will be long ere any perfectly satisfactory one will be produced. The study of the affections themselves is the main thing.

We have looked over the work and we must say that the diseases are sketched with distinctness, while the medical directions are precise. We shall extract those for the treatment of porrigo scutulata, pustular ringworm.

Premising, of course, proper constitutional treatment, our author advises that—

The local treatment should be commenced with warm water washes, and roll poultices, for three or four days; the loose hairs should then be detached by forceps; and, if there be no inflammatory condition, recourse should then be had to more stimulant treatment; but patience and perseverance are much required. I append recipes of several forms; premising, that it is essential to

wash off gently with soft flannel the previous applications, before employing the fresh ones

Acid. nitric. ʒss. ad ʒj. Aq. dist. ʒi. ad ʒiij.
Cupri sulphat. pulv. rubbed in lightly.

These two applications should, if they produce pain, be washed off ten minutes after their application.

Liq. plumb. subac.—Acid. acet.—T. opii. ā ʒiij. Mist. camphoræ, lb. ss.
U. Hydr. nit. m. ʒj. Camphor. ʒss. Sulphur. ʒj.
Potassæ sulphuret. ʒss. Aq. dist. ʒj.
Chloruret sodæ solut. in aq. distill.
Sodæ alicant. ʒiij. Potass. sulphuret. ʒiij. Aq. ʒiij.
Acid. acet (tepid) o. n. Ungt. hydr. n. m. mane.

If the crusts are very dry, liq. potassæ should be applied, and subsequently a warm poultice; after this, the infus. gallæ, to restore healthy action. In cases of several months' or years' standing, I apply a blister for 24 hours, for the purpose of changing completely the cutaneous tissue; it need not be kept open above a day or two, if it has effectually penetrated the deeper textures." 68.

Mr. Dendy does not mention an application which we have found beneficial, particularly in the porrigo decalvans—the ointment of the ioduret of sulphur. It is made of one part of "ioduret of sulphur," and eighteen to twenty of lard. It should be rubbed on the part night and morning very gently.

We recommend Mr. Dendy's as a practical book.

PERISCOPE;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

NOTICES OF SOME NEW WORKS.

ON THE SUCCESSFUL TREATMENT OF CONSUMPTIVE DISORDERS, AND FEMALE COMPLAINTS CONNECTED THEREWITH; ON SCROFULOUS DISEASES, &c. &c. By J. J. FURNIVAL, M.D. Octavo. London, Nov. 1838.

WE confess that the first two words in the title-page of this little volume excited some suspicions that another disappointment was about to be added to the many that we have experienced in a long career of practice, both at the bed-side of sickness and in the *dissecting-room* of the library. It was not unreasonable that some of the charlatanneries, couched under the seductive titles of "Consumption Curable," &c. should rise on our mental horizons, and make us sigh for the respectability of physic! From the mummeries of mesmerism, which, for six or eight months past, have excited the risibility and ridicule of every person, capable of knowing his right hand from his left, but which are now laid in the Tomb of the Capulets, we must fall back upon the dull and disgusting scenes of stale, money-making, pickpocketing, homicidal QUACKERY, unredeemed by a single touch of that sublime absurdity which rendered the animal magnetists the laughing stocks of the profession, and the merry-Andrews of mankind! Such were the transitory reflections that passed through the mind, while cutting open the first few leaves of the little volume before us. But we very soon perceived that the very suspicion of quackery excited by the title-page, was baseless, and that the author was of a stamp that secured him effectually against enrolment in that degraded list. Dr. Furnival is evidently a man of experience, observation, learning, and general science. Indeed, if we were inclined to "hint dislike, or hesitate a fault," it would be on the score of shewing off too much erudition and knowledge in a popular work like the present, and on a subject where classical lore and general science can avail us but little, and where close clinical observation and judicious experiment are the chief, if not the only means by which we can hope to benefit the community.

Our author has evidently read a great deal on consumptive diseases, and is in possession of all that ancient observation and modern dissection could do in illuminating their pathology, etiology, and treatment. The first seven chapters embrace pathogeny, and the non-naturals, as diet, exercise, secretions, sleep, study, &c. in which the author is rather discursive—perhaps a little theoretical or even fanciful—but that is very pardonable. The selections which the author has drawn from various sources are generally the best that could be collected, and his own observations, forming the connecting link are judicious. There can be no doubt that, if proper hygienic precepts were carefully acted on, the ravages of consumptive diseases would be greatly curtailed.

"If due attention have been paid to the foregoing hygienic precepts—if a wholesome climate, with its purer air, have been secured—if the secretions and excretions have been attended to—if the mind have been preserved in the happy

medium between inactivity and over exertion—if daily muscular exercise have not been neglected—and if, above all, the skin have been maintained in a healthy state by proper clothing, by frictions, by cleanliness, and bathings or spongings with cold water or with iodine solution—we may venture to assert that in persons so treated, the tendency towards deposition of tubercles will be counteracted, or if already deposited, there is much probability that they will be prevented from assuming an active condition; or still further that they may be even absorbed. By these means the delicate constitution may be strengthened throughout the very important periods of childhood, adolescence, and puberty; and disease, if it do occur, may be so successfully resisted as to prevent a fatal issue."

Unfortunately the medical practitioner is rarely consulted till the phthisical disposition is formed, or even considerably advanced. And if he is resorted to for advice at an early period, that advice is not followed. Youth will not be held in trammels—fashion must have its victims—delicate young ladies must go to balls and routs half naked—to theatres when the thermometer is below 32°—and the portions of their bodies that are deemed worthy of vesture, are girded into the narrowest span that whalebone and cordage can effect.

The eighth chapter treats of the symptomatology of phthisis, and is well written, evincing accurate observation. It will be very useful to parents whose progeny are disposed to tubercular affections. The medical reader is but too well acquainted with the phenomena of consumption. The ninth is a short, but well-executed chapter on diagnosis, from which we are tempted to make an extract, in a specimen of Dr. F.'s style and manner.

"In the early periods we must first ascertain that the dyspnœa, livid face, dry cough, or else the frothy sputum streaked or dotted with blood, do not depend upon the cardiac disease solely; and then we must take care not to mistake for this disease that affection of the bronchial mucous membrane called dry catarrh. In both diseases there are wasting of body, a dry cough, dyspnœa, and oppression; and these two last symptoms are exacerbated on exertion, such as running, ascending any elevation, and sometimes after meals. In both, too, these signs may remain in a latent or unchanging state for a long time, even for several years.

The oppression about the sternum and præcordia in these cases of catarrh, is also an unfailing attendant in consumption; and I doubt not but that it is connected with, if not caused by, the two carbonaceous state of the blood in this disorder.

Before the days when the light of the stethoscope was thrown upon our paths of practice, there is little doubt that these catarrhs were mistaken for tubercular consumption; but now, we can discover that percussion of the chest returns a healthy sound; and that although the respiratory murmur is, in severe cases, nearly inaudible at certain points for a time, yet it is still in most cases quite distinct; and that a slight clicking may occasionally be detected upon coughing or upon a deep inspiration. After a time the cough increases; but with judicious treatment the disease is gradually resolved, or it would have been followed by emphysema of the lungs. The various coughs called nervous coughs (arising from hysteria, disease of the brain, &c.), stomach or liver coughs—those caused by elongated uvula, pharyngeal, laryngeal, or tracheal irritation—will, for the most part, readily be diagnosticated, by the general signs as well as by the negative results, in respect to the lungs afforded by the stethoscope.

Chronic or senile bronchitis may be mistaken for phthisis in its latter stages, when vomicæ have formed; the opake, yellowish or dirty green, pelletty sputa of bronchitis being not altogether unlike the tuberculous matter; but in complicated bronchitis the history of the disease will inform us that the lower lobes were first or simultaneously affected; and also, that there has been a mucous wheeze, together with considerable distinctness of the respiratory murmer from the beginning."

The tenth and last chapter is on the treatment of phthisical diseases, accompanied by a few select cases. The principles of treatment—at least of preventive treatment may be easily gathered from the following few lines.

"From the preceding observations, it may be collected, what means must be adopted with a view to strengthen the constitution of a person who is in delicate health; and that those means are directed towards inducing a healthy state of every organ, by promoting the due performance of every function in the human body. The prominent tendencies in the weak or invalid constitution, seem to consist in, or to produce, an imperfect action or debility of the capillary system —a torpor of the cutaneous functions—internal congestions (venous)—and an arterial blood not sufficiently decarbonized. These states or conditions of the human animal economy, if suffered to remain unchecked would soon lead on to disease, most serious as to character, most threatening to life, and very intractable as to treatment."

This principle of prophylaxis applies to almost every disease in the nosology. It applies to the cure, too, as well as the prevention. If we can bring every organ and function into a healthy state, we shall have no disease to debar or cure. The worst of it is that such a state is never seen—even in the most apparent health—and can never be induced in such a class of diseases as that of consumptive—or indeed of any class. In the scrofulous and phthisical constitution we can seldom keep even the majority of functions in a state of health. All we can do, then, and all that we can expect, is to lessen as much as possible the derangements of function in the several organs, since we well know how little power we have over organic changes. This minute attention to all the functions, and exact regulation of all the non-naturals, is the "successful" method of treating consumptive diseases announced by our author—and doubtless it is the most rational and the most effective plan of treatment. Dr. F. proclaims no specific—no *inspired* nostrums—no lung-stretchers—no infallible liniments or other quackeries. The following passage may be easily applied where the shoe pinches.

"One cannot but be aware of the danger which now exists, of overrating the influence of remedies in phthisis. Since the time when Lænnec discovered the cicatrization, or fibro-cartilaginous lining of cavities left by vomicæ: and when he, in prophetic, as well as strictly philosophical spirit, boldly announced the future *curability of consumption*, many persons (*some, per chance, with motives not altogether above suspicion*) have raised a cuckoo-note, and proclaimed themselves consumption-curers, even in advanced stages of the disease;—with stethoscope in hand, they profess that they can watch, and accurately tell, to what extent each cavity fills up, *from day to day*. With such persons, the faithful inquirer cannot coincide. For although we may effect a great deal of good in the early stages; and although we occasionally meet with extraordinary instances of suspension of morbid action in the more advanced periods; yet in these latter, when disorganization has ensued to a considerable extent, the medical practitioner can do little or nothing as to cure, though he can help much as to palliation."

The abominable length to which the Charlatannerie above mentioned is now carried by certain unprincipled practitioners, is truly disgusting. These vampires have no hesitation in assuring their patients and the relations of their patients, even a day or two before death, that the excavations are filling up rapidly, and that recovery is certain! What care they about the disappointments—bitter ones which the friends are doomed to experience. They know that the mouths of their patients will be sealed by the hand of death, and that the friends will be ashamed to proclaim the quackeries of the doctor, as reflecting, in some degree, on those who employed and believed him.

We must close our notice of this respectable little volume with one more extract.

"Fortunately for those whose purses will not allow of travelling and sojourning in foreign lands, but very few if any cases will now imperatively require to be sent abroad; for lately a most ingeniously constructed and practically useful apparatus has been offered to the public, the objects of which are to enable the pulmonary or consumptive invalid to take exercise, without risk, in the open air as frequently as may be necessary, and to prevent the bad effects arising in the respiratory passages from the sudden changes in the temperature. I allude to the Oral Respirator.

One of the great benefits afforded by a warm climate consisted in this, that it allowed the invalid to take exercise and walk about in the open air, at less risk and with less coughing than was possible in a colder or more variable climate; but from a residence of some years in a warm climate, whither invalids were wont to flock, I am convinced this advantage was not always obtained, and that many a piercing change of weather, incidental to such climates was unnoticed or disregarded by writers, who recommended these migrations.

However this may be, this benefit is now offered to the Englishman in the Respirator, and he may enjoy every possible home comfort, at the same time, that by doing so he does not throw away any of his chances of recovery. Such is my high opinion of this instrument, after having worn it, and after having seen how it has acted with several of my patients, that I would now with great confidence of success, enter on the treatment of many a case of pulmonary consumption, and of irritable air-passages, which hitherto I should have deemed it my duty to send to Madeira or elsewhere."

The use of the respirator is becoming daily more extended and appreciated. It will enable thousands to pursue their avocations in the open air, who were formerly confined to their houses during a considerable portion of the year, and hundreds to remain in England, who would otherwise emigrate to Italy and Madeira. We take leave of Dr. Furnivall with sentiments of respect, and wish him success and health in his rural life, as contrasted with his metropolitan avocations.

ON THE IMPROVEMENT OF MEDICINE. By THEOPHILUS THOMPSON, M.D.

This little brochure formed the oration at the London Medical Society in March last, and was well received by the members. The author sets out with the increase of longevity, proved by the bills of mortality, as owing, at least in part, to improvements in medical science, and practice—and this boon may be fairly granted. But he comes to closer quarters, and examines the comparative mortality of particular disease, now and heretofore. At one of the puerperal hospitals in London, half a century ago, the average of deaths in parturient females was more than one in sixty—it is now little more than one in three hundred. A similar diminution is recorded in the mortality among children. Since vaccination, the mortality from small-pox in the metropolis is reduced from five thousand to three hundred per annum. Sea-scurvy has now nearly ceased to exist in our navies—but this is more owing to good diet, comfort, and discipline, than to lemon-juice.

Our author adduces the treatment of insanity as a proof of advancing medical science. The disease is now very generally considered as the consequence of some corporeal disorder, and, of course, the treatment is more successful than formerly. The use of the stethoscope—the diminution in number of surgical operations—the improvements in the physical education (!) of children—the attention to diet—all these, he thinks, offer indubitable proofs of the march of medical intellect.

From the future he anticipates much, and thinks that the labours of Bell, Breschet, Hall, and many others, will remove much of the veil which hangs

over the mysteries of the nervous system. He particularly alludes to the investigations of Dr. Todd of Brighton, respecting an "art ficial digestive fluid," by means of which he has succeeded in resolving the tubercles of phthisis into their constituent globules, thus dissipating the theories of Gendrin, Baron, Carmichael, and others. The agency of mineral waters on the minute extremities of the human tubes is expected to do great things in therapeutics. The numerical or statistical method is now being cultivated with considerable ardour and expectation.

"No one can too much admire the noble, self-denying contempt of labour, or the comprehensive talent of Louis, the founder of the numerical school, leaving the lucrative engagement of an established practice, and devoting himself, in the hospitals of Paris, to a rigid investigation of medical doctrines; but what are the practical results of his exertions? To mention one of the most prominent illustrations: he has detailed a number of cases of inflammation of the lungs, giving the numbers treated by various methods and the proportions recovering, under each plan, with a view to determine the comparative efficacy of different modes of practice, especially bleeding, and the conclusion is, that in pulmonary inflammation the *power of bleeding is very limited;* in short, that it is *almost indifferent whether we bleed or not.* You will at once perceive, Sir, the fallacy of the conclusion. We know, from our own experience, that in pneumonia, a free use of the lancet (with the aid of antimony) is generally followed by a cure; and some of us, who have had occasion, on the Continent, to witness the practice of those who disapprove of bleeding, *have too often seen the disease, under such circumstances, proceed to a fatal issue.* No numerical rules can be expected to determine the treatment of diseases, which must be modified by age, sex, temperament, period, state of atmosphere, habits of life, and other circumstances, which is not in the power of figures to express. The vital principle is not amenable to numerical laws."

Yes. Those are some of the blessed effects of continental doctrines and practice. In the mode of bleeding in France, there is much less advantage gained than in that which is adopted here, and hence another reason for its deprecation amongst our neighbours there.

A great many useful hints are thrown out by Dr. Thompson respecting medical education, as tending to the improvement of medical science. He censures severely the new poor laws, as respects the medical contract system; but he has not alluded to the greatest grievance of all, and that which retards the cure of disease (which after all must be the grand object of our art) more a great deal than the new poor laws—the mode of remuneration for medical services in private life. This is the plague-spot, which medical reform writers seem afraid to contemplate or even mention! The mode of remunerating medical men for the drugs *delivered* rather than swallowed, is injurious to the patient and degrading to the practitioner. If all the medicines are taken the stomach is overloaded and sickened—if they are thrown aside—half or more of them—then the practitioner is deceived, disappointment results in that way! It is true that a few general practitioners, long established, and enjoying the full confidence of their patients, are able to charge for their visits, even under existing laws;—but the great mass of junior medici dare not risk such a step, and the evil continues. Nor with that body which regulates the education, and superintends the affairs of the general practitioner, ever try to remedy the evil in question. It is their interest to perpetuate, not to eradicate it. The more drugs that are swallowed—the more must be bought and sold—and the more grist must come to the medicine-mill in Bridge Street. Our sentiments on this point have long been known—but we confess our astonishment at the manner in which medical reformers slur over this paramount evil, while others of very minor consequence are daily and weekly dwelt upon with all the fire of angry denunciation.

The oration is very creditable to Dr. Thompson.

ON THE CAUSES OF EPIDEMIC FEVER IN THE METROPOLIS, ESPECIALLY AMONG THE LABOURING CLASSES. By HOLT YATES, M.D.

THIS small brochure contains a meritorious attempt to draw the attention of the magistracy, and other authorities, to one of the chief causes of fever among the poor in this overgrown city; namely, malaria arising from filth of various kinds. Low fever has prevailed to such an extent, of late, that the fever-hospital cannot give admission to one-tenth of the applications, and it appears that some of the general hospitals have determined not to take in cases of fever. This is a strange resolution, and we suspect that the governors and subscribers will hardly continue to sanction it. The class of diseases in which the subscribers are most interested, whether occurring among their own servants, or their poor neighbours—is fever. Besides, as every inflammation of an internal organ is attended by *fever*, how will the nature and seat of the malady be ascertained till after reception? Will the diagnosis be left, on all except receiving days, to the discrimination of the apothecary? Or, if no topical inflammation be apparent, is the poor wretch to be turned from the hospital as a dangerous inmate labouring under typhus? The regulation is monstrous!

"The hospitals have now come to the determination not to admit, in future, fever cases at all; and I would ask what, under these circumstances, are the industrious classes to do? However ill they may be, they cannot be taken into the workhouses. Shunned by their neighbours, perhaps, and having parted by degrees with nearly all they possess, we find them, many at least, destitute of the most common necessaries of life. They are sick and dejected; several members of the same family are to be seen lying on the floor, upon a bed of straw, with scarcely any covering, no change of linen, no nurse, no friend to help them to so much as a cup of water to slake their parching thirst; and this is not always the result of intemperance and dissipation. The most formidable disease will suddenly make its appearance, and steal insidiously from room to room, and from door to door; its course and progress may be regularly traced. I have known the same fever attack, in succession, different families that have occupied the same apartments, the results partly of contagion, and partly of the continued operation of the same causes. There is no mystery about it, nor is there any thing imaginary in it, as those will see who take the trouble to investigate the fact. I repeat, *it is the existence of these causes* which we have to thank for the prevalence of fever in the metropolis."

Dr Yates proceeds to investigate these causes, warning the medical officers of public charities, who are obliged to visit the dens of dirt and foci of fever, to be on their guard against the pestilent air that surrounds them. He deplores the want of a "Council of HYGEIA," or "Board of Health," in this country, as it exists in many parts of the Continent. We have plenty of "parish officers," "relieving officers," "visiting committees," "guardians of the poor," &c. but what is every body's business is nobody's!

The chief sources of impurities of the atmosphere are—defective ventilation—the existence of noxious vapours, dust, and other extraneous bodies—combustion, and the respiration of animals—and, lastly, the presence of disease itself. The habitations of the poor too often disclose all these different sources of malaria and febrific miasmata.

In many parts of the City there are *no sewers at all*; and the stench arising from cess-pools, privies, and drains, is often intolerable. Will it be believed that, until within these few months, there were no sewers even in Cheapside, Fore-street, Barbican, &c.? What must be the state of the lanes, alleys, and courts, in the densly populated parts of the metropolis. The annual mortality of Middlesex, which is comparatively open and drained, has been found to be one in 36, whereas it is only one in 73 in Cardiganshire. The author proceeds

to describe scenes and localities infested with fever, which would make the higher classes shudder, even at the perusal. The places of interment are mischievous sources of disease too, and are disgraceful to this metropolis. But we are unable to do justice to Dr. Yates's pamphlet, which we hope will circulate widely through the public at large, especially through those districts of the metropolis where poverty and destitution—filth and fever—so abundantly prevail.

Observations on the Oriental Plague and on Quarantines, &c. By John Bowring, Esq. pp. 45. Edinburgh. Tait, 1838.

The substance of this brochure was read before the British Association last year, at Newcastle. The longer we live, the more we see, and the deeper we reflect, the less faith have we in the *degree* of contagion attributed to plague, and in the efficacy of quarantines, as preventives of the diffusion of the poison. This cumbrous, costly, and vexatious system of sanatory, or rather of *insanatory* laws, is one of the worst relics of the dark ages of medicine. We very much doubt whether it ever did or ever will prevent the introduction of a single particle of plague contagion into this country. Of local origin, this pestilent fever rises every year, and prevails more or less according to season and many modifying agents. It is occasionally epidemic—and perhaps, like all endemics and epidemics, it may acquire a contagious quality, and be propagated under peculiar circumstances. But that it has neither inclination nor power to travel from the Bosphorus to the Thames, we firmly believe. What language could more accurately depict the rise and progress of the late cholera than the following, applied by an eye-witness to the plague of the East?

"I discovered at every step that the contagiousness of the plague was always *assumed*, as the groundwork of all discussions,—and that the most extraordinary absurdities,—the most amusing inventions were resorted to, in order to account for its outbreak where every precaution had been taken to avoid contact with any human being,—or any supposed infected or susceptible objects. Wherever I had occasion to witness the introduction or progress of the disease—its introduction was spontaneous,—indigenous,—endemic,—its progress never traceable from patient to patient; it broke out in districts remote from one another, between which there had been no communication, and while my own observation surrounded me on one hand with thousands and tens of thousands of cases, in which the most intimate intercourse with persons ill or dead of the plague—the dwelling in their houses—the wearing their garments—the sleeping in their beds, were not followed by disease in any shape, I was called on the other to listen to stories as evidence of the contagiousness of plague, so puerile, so ridiculous, that nothing but oriental credulity could by possibility be satisfied by them."

Some of these "oriental credulities" were actually equalled in this country, during the cholera-phobia panic of 1832-3. We shall give an instance of the oriental type.

"In an instance where a very timid person, an alarmed contagionist, who was attacked and died of the plague, had shut himself up in his chamber; it was found that his son had, for his amusement, let up a kite from the roof of the house, and it was supposed that the kite-string had been touched by a bird, which bird was imagined to come from the infected quarter of the city; the plague entered the house down the string of the kite, and the son's father became the victim."

Our readers will see, in a late Number of our northern contemporary, a paper of nearly 100 pages, on cholera in Scotland, exhibiting numerous proofs of contagion, about as forcible and philosophic as the above?

So strong is the conviction, or rather the prejudice, respecting the contagion

of plague in the East, that medical men are afraid of declaring their real sentiments, lest they should be denounced, not merely as unorthodox, but as dangerous persons, who do not take the proper precautions, and the regular purifications. But even amongst the contagionist physicians of the East, the efficacy of quarantine is very much doubted. Clot Bey has thrown off the belief in contagion, and is about to publish on the subject. Most of the Egyptian physicians, too, appear to be following his example. We need hardly add that the Mohomedans, almost to a man disbelieve in the contagion of plague.

Dr. Bowring lashes severely the Lazarettoes, Boards of Health, and other appendages to the quarantine system; but as one of our contemporaries has copied nearly the whole of the pamphlet into his Journal, we need not make any extracts in this place.

We are glad to learn that the Emperor of Russia and King of Prussia have sanctioned the formation of a congress to investigate the nature of plague and the advantages or disadvantages of quarantines. The congress is to be composed of distinguished physicians and politicians, chosen by the different maritime states of Europe. Such a congress should be held in some place where plague is an annual visitor, and where authentic evidence could be obtained on the spot. The parliamentary inquiry in this country led to nothing, as few of the examined had ever seen the plague, or been in localities where it is endemic. Even of the few who had been in the East, it is very doubtful whether any of them had ever actually treated a case of plague, or done more than peep through the window or key-hole of an infected ward or lazaretto.

Dr. Bowring deserves the thanks of society at large, and of the mercantile world in particular, for this pamphlet.

THE MEDICAL ANNUAL, OR BRITISH MEDICAL ALMANACK, 1839. Edited by *William Farr*. London. Price three shillings.

THE Almanack for 1839 retains its character. It is an useful compilation. Its great aim is to further medical statistics. Mr. Farr is quite an enthusiast in that way.

It contains the usual amount of information with respect to the medical corporations, societies, hospitals, and schools. Besides these matters it presents some papers of a miscellaneous character. Of these the more remarkable are :—

Remarks on Hospital Medical Staffs, by the Rev. C. Oxenden.—History of the Medical Profession, and its influence on public health in England. By the Editor.—Statistics of the Kent and Canterbury Hospital. By John M'Divitt, M.D., Physician to the Hospital.—Facts illustrative of the Pathology of the Heart. By J. Clendinning, A.M. and M. D.—Temperance in the United States of America. By J. C. Warren, M.D., Professor of Anatomy in Boston.—On Cholera.—The laws of Mortality and Recovery in that disease. By William Farr.—Abstract of a Report of the Diseases of the Army. By Captain Tulloch. —Report of the Medical Committee of the University of London—Proposed terms of Graduation.

We hall pick out a few facts, or statements for quotation.

1. ON HOSPITAL MEDICAL STAFFS.

The Rev. Charles Oxenden, of Bishopsbourne Rectory, has devoted his attention to the subject of hospital medical staffs. He shews that, in provincial hospitals particularly, a constant or rational proportion obtains between the numbers of the medical staff and the patients.

"By referring," he says, "to the second and fifth columns of my annexed table A, you will find, that, while in the year 1830, when my Statistical Report of Provincial Hospitals was printed, *four* medical officers had the care of ninety-nine beds at *Leicester*, of one hundred beds at *Northampton*, and of one hundred and seventy beds at *Gloucester*, the *same number* of officers were appointed at *Hereford* to attend upon fifty-two beds, and at *Bury* upon fifty *only*. Again, while *six* medical officers were deemed ample for one hundred and five beds at *Norwich*, for one hundred and seven at *Salisbury*, for one hundred and twenty-four at *Leeds*, and for about one hundred and fifty at *Shrewsbury*;—*six* were also required for the charge of eighty-five beds at *Sheffield*, of seventy-nine at *Derby*, of sixty-five at *Canterbury*, and of sixty-two at *Bath* (General Hospital.)"

We need not follow Mr. O. in his examination of the causes of disproportions of this kind, but conclude by presenting his estimate, which appears to us a fair one, of what the medical staff of a hospital should be.

"But it will be asked, what is the *best* proportion for a medical staff? And this, I must allow, involves some difficulty in the reply. But though difficult, I do not think it desperate. For I am well persuaded, that, though it may be impossible to lay down a perfectly mathematical scale of proportion, adapted equally to all places and circumstances; yet it *is* possible to *approximate* to such a scale, as will be calculated to insure a *fair promise* of beneficial results. This scale, however, must, to a limited extent, be made *variable*, by reason of certain *district* peculiarities, which operate to the increase or diminution of labor. In some hospitals, for instance, *surgical* cases will be found to predominate, but in most (including I. P. *and* O. P.) *medical*; while in others they will nearly *balance*. Again, in some localities hospital disease is more generally *acute*, than in others; requiring therefore more *daily* attendance, and occupying of necessity more professional *time* during treatment, and hence justifying a more extended *division* of labour. But, as a general system for adoption, I am disposed to think that hospital staffs, formed after the following scale, would best subserve the welfare of the patients, and facilitate the operations of the boards of management. Whether, or not, it would square with the interested speculation of individuals, enters not into my calculation.—

Proposed Number of Medical Officers for an Hospital containing

From	1	Bed to	75—	Say 1	Physician,	1	Surgeon,	1	House-surgeon.
—	76	—	125—	2	——	2	——	1	——
—	126	—	175—	3	——	3	——	1	——
—	176	—	200—	4	——	4	——	1	do., and 1 House
				&c.	&c.				Apothecary.

In those neighbourhoods (in certain manufacturing districts, for example,) where *surgical* cases predominate, I should be disposed to add one surgical officer. And when out-patients (a large majority of whom will generally be found to be *medical*) are excessive, as at Bath, an additional physician would be advantageously appointed. Under any arrangements also for visiting *home* patients, further staff appointments may become necessary These, however, are *exceptions* to, and do not militate against the principle of, my general scale."

2. THE BARBER-SURGEONS, AND SURGEONS NOT BARBERS.

The following memorandum of these two classes, now happily disjoined for ever, may amuse.

Among the various uneducated classes accustomed to use edge tools, who practised surgery, the barbers were distinguished at an early period. The first charter was granted, in the 1st Edward IV., to the freemen of the mystery of barbers (Misterae Barbitonsorum) of the City of London, practising surgery (*facultate sirurgicorum*) in wounds, lesions, and other infirmities; in letting

blood and drawing teeth. The alleged grounds on which the charter was granted were the ignorance, and negligence of the freeman themselves, and of other foreign surgeons (*sirurgicorum forinsecorum*) not free of the city, daily flowing into London. It is evident from this charter that in 1461 surgeons existed in London; and this is confirmed by the 32 Henry VIII., c. 42, A.D. 1540, where two distinct companies of surgeons are mentioned, the one called the Barbers of London, the other the Surgeons of London; the barbers incorporated, the surgeons without any manner of corporation. The relative position of the barbers and surgeons of London is somewhat obscure; it is illustrated by the state of things in France. Several Surgeons in Paris, with Jean Pitard, surgeon to St. Louis, at their head, separated from the faculty of medicine in 1271, and formed a distinct college; the members were allowed to marry, enjoyed the same privileges as masters of physic, and wearing the same long robes, were called *chirurgeons de robe longue;* or, to distinguish them from the barbers, *chirurgiens lettrés.* They studied medicine two years, and underwent strict examinations. The Faculty of medicine discountenanced the surgeons, and in 1505, to encourage the barbers, undertook to provide them with lectures in the French tongue. The barbers, supported by the faculty, were constantly embroiled with the surgeons; and the latter at last wearied with the strife, sacrificed themselves to the supremacy of the doctors of physic; *chirurgiens jurés* were incorporated with the *chirurgiens,-barbiers* and sank at once into insignificant rivals of the umbrageous faculty. William of Salicet, Lanfranc of Milan, Gui de Cauliac, raised surgeons to a higher rank, and better educated men than the barbers became indispensable; but these elevated surgeons attended the middle classes in sickness, and aspired higher. In England the same course seems to have been taken; the barbers, evidently supported by high authorities, attempted to suppress educated surgeons; they then tempted them into a degrading connexion, by the offer of common privileges and funds, and lands, and tenements.

3. TEMPERANCE SOCIETIES IN AMERICA.

The following statements are from the pen of Dr. Warren, Professor of Anatomy in Boston.

In 1813 a society was formed at Boston, called the Massachusetts Society for the suppression of Intemperance. The individuals who combined for this object were distinguished statesman, clergyman, and physicians. The means employed were the annual distribution of discourses showing the great evils produced by the use of alkoholic drinks. The efforts of this society were met with ridicule and abuse for some years; their opinions, however, gradually extended among the people, and in the year 1826 the American Temperance Society was formed in the same city, and immediately began a train of active operations.

About this period, the clergy, the judges, and the medical faculty united in their opposition to alkohol. The results of all these movements appeared in the year 1835, from the following facts:—About 2,000,000 of persons who had been in the habit of using alkohol had abandoned it. More than 8,000 temperance societies had been formed, embracing 1,500,000 members. Of these societies twenty-three were state-societies, comprising all the states in the union but one. Four thousand distilleries had been stopped. More than 1,200 vessels sailed without ardent spirits, and the price of insurance lessened on these vessels. About 12,000 drunkards had been reclaimed, and more than 200,000 persons, had abandoned the use of all intoxicating drinks. Since the year 1835 the numbers above stated have been increasing, and other important results have shewn themselves. The bills of mortality exhibit a decrease of deaths in the places where reform has been extensive. The inmates of poor-houses, compared with the increase of population are diminishing; the amount of crimes is decidedly

less, and it is a frequent occurrence to notice in the newspapers, that a county jail is without a single tenant. Alienations of property from families, whose heads had become drunkards, have lessened in a very remarkable manner in almost every town; the use of wine is diminished among the rich, and instead of the strong Spanish wines, the light wines of France and Germany are getting into general use. In consequence of this the chronic affection of the stomach, commonly called dyspepsia, which was very prevalent, has almost disappeared, and gout is scarcely heard of.

The disuse of ardent spirits in the northern states is believed to have increased the physical power of this section at least one-sixth, so that if we allow for its population about 5,000,000, the force of a million of persons will have been added, while the expense of supporting the 5,000,000, instead of being increased, has diminished by the appropriation of that grain for nutrition which was employed for distillation.

The public sentiment is so strongly in favour of prosecuting the temperance reform, that it called on the legislature of Massachusetts to prohibit the sale of ardent spirits on Sundays about a year since; and this law has operated so satisfactorily, that in the present year (1838), a law has passed prohibiting the sale of ardent spirits in less quantities than fifteen gallons, thus annihilating all the grog-shops in that state at a single blow. A similar measure has been adopted by the state of Tenessee, in the west, at a distance of 1000 miles from Massachusetts, which is in the east, and other states will probably follow their example.

An Account of some New Instruments for Tying Polypi of the Uterus, Nose, and Ear, and Enlarged Tonsils; with Cases. By *William Beaumont*, Surgeon to the Islington Dispensary. 4to. 3 Lithographic Plates, 1838.

The Instruments recommended by Mr. Beaumont are so ingenious, that we wish to introduce them to the notice of our readers. Yet it is impossible to render them quite intelligible without the assistance of the plates accompanying the work. These, from their size, are inadmissible. We shall therefore content ourselves with merely presenting a brief description of the more important instrument, that for tying the polypus uteri, and refer our readers to the pamphlet itself for any further information.

The instrument for tying uterine polypi, consists, among other parts, of two rami parallel to each other, save that one is slightly curved towards its point, so as to correspond in some measure with the posterior parietes of the vagina and the more readily to allow the body of a polypus to pass between the rami; which parts of the instrument are temporarily joined together at the handle, the distance between them being capable of increase or diminution according to the size of the polypus to be tied. The curved ramus is solely for the purpose of aiding in the placing of the noose around the pedicle of the polypus, and may be removed from the rest of the instrument and from the vagina when that is accomplished. The straight ramus, besides assisting in the application of the ligature, is also, with other parts, attached to it, the means by which the noose is tightened, and rendered unyielding.

This instrument is perhaps somewhat complex, but it should be borne in mind that it is to accomplish a complex purpose. It is first to carry a noose around the pedicle of a tumor in a narrow passage; it is then to constrict the pedicle so far as to strangulate the tumor; and lastly, to jam the running end of the noose in the knot, so as to prevent any elasticity of the pedicle from enlarging the noose.

In describing Figure 2, Mr. Beaumont writes :—

"This represents the manner of arranging the ligature, which consists of a common slip-knot noose. That end of the ligature which comes from and forms the knot of the noose is represented by the uninterrupted double line; it is passed through the eye *d*, and drawn (not very tight) through the hole in the axle *k* where it is fastened, by which means the knot of the noose is held at the very point of the straight ramus. The running end of the noose, which is marked by a double dotted line, is passed through the eye *c*, through the hole in the axle *h*, and made fast under the spring *i*. The noose, about two inches from the knot, or more or less according to the thickness of the pedicle to be encircled, is to be placed in the eye *e* of the curved ramus, and there confined; the noose is then to be caught about two inches nearer the handle of the instrument at *b*, between the curved ramus and spring, from whence it is to be carried down to *f*, and there caught again between the same spring and ramus; it is then to be carried across to the straight ramus, and caught under the spring *g*. The several parts of the ligature parallel to the rami of the instrument are to be drawn sufficiently tight to lie close, so as not to impede the passage of the polypus between the rami.

To encircle with a ligature, by means of these instruments, the pedicle of a polypus, whether of the uterus, nose, or ear, consists in the mere act of pushing the tumor between the rami of the instrument. The application of the ligature around the neck of the polypus is then accomplished, and little else remains to be done than to tighten the noose so far as to prevent the ingress of blood into the tumor. This, I believe, may always be done at one operation, however large the pedicle; and in cases where its structure is not very firm, I think the constriction might (if it were desirable) be increased to a degree sufficient to sever the pedicle in two, for the instrument has great mechanical power, a small axle and long lever. It certainly would be a mode of excision preferable to that effected by the knife or scissors."

These extracts will give a vague idea of the general character and operation of the instrument. Anything beyond that cannot be obtained without consulting Mr. Beaumont's own account. Mr. B. is evidently an ingenious surgeon.

RECENT WORKS ON SURGERY.

I. A SYSTEM OF PRACTICAL SURGERY, WITH NUMEROUS EXPLANATORY PLATES, THE DRAWINGS AFTER NATURE. By *John Lizars*, Professor of Surgery to the Royal College of Surgeons, and lately Senior Operating Surgeon to the Royal Infirmary of Edinburgh. 8vo. pp. 220. 18 Plates.

II. THE PRINCIPLES OF SURGERY, VOLUME FIRST; CONTAINING THE DOCTRINE AND PRACTICE, RELATING TO INFLAMMATION AND ITS VARIOUS CONSEQUENCES, TUMORS, ANEURISMS, WOUNDS, AND THE STATES CONNECTED WITH THEM.—VOLUME SECOND; COMPRISING THE SURGICAL ANATOMY OF THE HUMAN BODY, AND ITS APPLICATION TO INJURIES AND OPERATIONS. By *John Burns*, M.D. F.R.S. Regius Professor of Surgery in the University of Glasgow, &c. &c. 8vo. pp. 554–536.

IT is rather singular that, at the same time, two systematic works on surgery should issue from two Northern Universities—those of Edinburgh and Glasgow. The respective authors are both men of acknowledged attainments and abilities, and their opinions on many points of doctrine and of practice would necessarily command attention. It is quite inconsistent with the nature of this Journal to analyse elementary works of this description. We can only introduce them to

our readers, present an idea of their respective contents, and, perhaps, expose the sentiments of their authors on some particular points.

Let us first turn to Mr. Lizars. The present volume is only the First Part of his system. The concluding part is advertised to appear in December.

The present Part contains—Inflammation —Arteriotomy.—Phlebotomy.—Suppuration.—Abscess.—Ulcers.—Dissecting-room Wounds.—Mortification.—Diseases of the Arteries, Aneurism.—Of the veins, Hemorrhage.—Of the Bones, Fractures.—Of the Joints, Luxations.—Gunshot Wounds.—Amputation.

1. *The Edinburgh College of Physicians allow their Fellows to use the Lancet, &c.* —After a succinct sketch of the history of surgery, Mr. Lizars sums up thus:—

"It is evident, that surgery has only flourished in proportion as it was strictly connected with anatomical investigation, and enriched with medicine or pathological doctrines. At first it was combined with medicine, and in the days of Herophilus, and Erasistratus, Celsus, and Galen, it was also united with medicine and Anatomy. After this, when anatomy could only be prosecuted by stealth, surgery continued in a truly deplorable condition, and in the 11th century, was stigmatized by the Council of Tours. In the 12th century the school of Salernum, and also that of Naple's required only one year's study of anatomy for the diploma of surgeon. In the 15th century, we find the great Paré still a barber surgeon, and controlled by the physicians. At Oxford and Edinburgh, the two first universities in Great Britain, anatomical chairs were not established until the last century; and at neither school was dissection prosecuted until this century, and that only at Edinburgh, where the study was not sanctioned by Government till within the last six years. So that it was only at the dawn of medicine, and in the present era, that surgery, blended with physic, became a respectable profession. It is much to be regretted that there exists any separation, since it only tends to depreciate each, as physicians must be consulted in accidents, the province of the surgeon; and the surgeon must be acquainted with the treatment of fever supervening to operation. All, therefore, ought to have the same elementary education, and be qualified for every department. The operating surgeon ought to dissect daily. Lately the College of Physicians of Edinburgh have wisely rescinded a law which prohibited their fellows from using the lancet or the scalpel. 'Etenim omnes artes,' says Cicero, 'quæ ad humanitatem pertinent, habent quasi vinculum commune.'"

The College of Physicians of Edinburgh have displayed common sense and sagacity. It may be questioned whether the one or the other is to be found in the College of Pall Mall East. Recent events have shown the antiquated absurdity of *its* spirit in the person of its president.

It would be idle in us repeating what we have so often urged, that the education of the surgeon and physician should be similar. Chance, inclination, or convenience may subsequently determine the line of practice, but to that each should carry miscellaneous and common knowledge. If the physicians pursue their former system, it is not difficult to perceive that the surgeon will ultimately strip them of practice. The scholastic learning which sufficed for the descendant of Esculapius, when medicine was system, its doctrines the offspring of dogmatism and authority, and its practice little else than empiricism, is comparatively valueless in the present advanced condition of the science. Its foundations in healthy and morbid anatomy are so deep and so extensive, that whoever is best acquainted with *them* will be most thoroughly conversant with *it*. In the long run the class of men who possess the really useful knowledge will obtain its fruits, fortune and fame.

2. *Lancet Punctures in Inflammation.*

These are, probably, insufficiently estimated and resorted to. Mr. Lizars gives some short but judicious hints in relation to them.

When punctures are made, attention must be paid to the position of the part affected, for unless the return of the blood be in some degree impeded, no blood will flow. Thus when the face is the seat of the inflammation, it should be held forwards and downwards; when the scrotum, it should be immersed in hot water, while the patient stands. The lancet should be held the reverse of that while opening a vein at the bend of the arm, and the point of the instrument plunged that degree of depth corresponding with the structure of the part and the proximity of blood-vessels, and always parallel with the subjacent muscles. It should be entered here and there, or at irregular distances.

3. *Chronic Hypertrophy of the Scalp.*

We observe the following notice of this affection, which, so far as we know, is not commonly described.

There is, writes Mr. Lizars, a peculiar ulceration with chronic hypertrophy attacking the scalp, which may be considered here. It is more a thickening of the integuments than ulceration, but there are occasionally extensive sinuses, and a profuse secretion of pus, with disease of the periosteum, and even the cranium. It begins by a thickening of the integuments with achores on the surface, both of which make progress, until the skin be puffed up and divided by deep sulci, into compartments of various shapes and sizes; these latter ulcerate and communicate by sinuses, thus undermining and destroying the scalp, and involving the periosteum and even the bone. In some cases, acute pains are felt not only in the head, but all over the body. Some have laboured under rheumatism, others, syphilis. When noticed early enough, the potass destroys this morbid condition of the integuments which then heal by means of bread and water poultices. When neglected, the sinuses must be laid open, and only partially if very extensive; the potass must still be applied, and afterwards the poultices. Alteratives, such as the sarsaparilla, or the nitric acid, should be prescribed.

4. *Linear Admeasurements for finding and securing the Femoral Artery.*

We quote the following directions for operating on the femoral artery in the case of popliteal aneurysm, because we think that linear admeasurements are valuable when precise. We know that this is questioned by some surgeons, but nevertheless we are ourselves convinced of its correctness.

"The patient should be placed on a firm table, with his feet at right angles to each other, but the affected separated from the sound limb. The space between the anterior superior spinous process of the os ilium and the spine of the os pubis is to be divided into ten proportional parts, when five and a half measured from the pubes are made the base of an equilaterial triangle which is to be constructed downwards on the thigh, the apex being distad, the base proximad; and the outer or iliac side of this triangle should be extended from the apex twice its length, when the artery will be found to run beneath this line throughout. An incision should then commence at the apex of the triangle, and be continued down the thigh to the termination of the extended line, or proportionally to the depth of skin and cellular tissue, the latter of which is often infiltrated with serum; this incision is to be deepened equal in length to the first, and should pass through the fascia lata, and this cautiously, when the pulsation of the artery will be felt; the artery is then to be denuded to the smallest possible extent of its cellular sheath; the latter of which is to be held up with the dissecting forceps in the left hand, and the scalpel in the right, with its cutting edge parallel to the vessel, and pointing outwards or fibulad."

5. *Diseases of the Bursæ and Bunion.*

"When," writes Mr. L., "the bursa over the olecranon ulnæ is distended with fluid, it may be mistaken for dropsy of the elbow-joint; when the bursa under

the deltoid is diseased, there is often a communication with the shoulder-joint at the bicipital fossa; and a similiar connexion as frequently exists between the bursa under the psoas tendon and the hip-joint, which renders disease of these two last bursæ very serious. The bursa superficial to the larynx is sometimes affected, and when it is allowed to rupture, sinuses form; that over the angle of the scapula now and then becomes diseased, and so also that under the tendinous insertion of the sartorius and gracilis muscles.

A species of spurious or adventitious bursæ is apt, in peculiar situations, to be generated or called into action by pressure and friction; for example, in the integuments over the ball of the great toe, over the patellar ligament, and in the club-foot, where it rests upon the ground. That on the tibial or inner side of the great toe seems gradually to multiply, or rather one bursal pouch is formed upon another, constituting what is named a bunion. The lateral ligament of the joint has a compact laminated structure, the laminæ dense towards the bone, and less so towards the skin, as if bursæ had successively formed, or were forming, as fast as the outer one was obliterated. In many instances, the head of the metatarsal bone is changed, the cartilaginous surface being covered with warty granulations. The tumour inflames, becomes exceedingly troublesome, and even causes lameness; it occasionally suppurates, involves the joint of the toe, and leads to amputation. At first, by fomentation and rest, and afterwards, the application of the nitrate of silver in the dry state, and the wearing of a wide shoe, with the sole thicker towards the tibial aspect of the foot, all these evils may be averted."

We may observe, that the affections of several of the bursæ are often mistaken, indeed more often than the contrary. The surgeon should be well aware where bursæ naturally exist, particularly such bursæ as are in the neighbourhood of joints. We have more than once seen disease of the sub-deltoidean bursa (not unfrequently a result of rheumatic fever) mistaken for disease of the shoulder. A provincial physician, of some eminence, pronounced a case of rheumatic disease of the sub-psoas bursa, morbus coxarius. We have twice, once during life, and once after death, seen disease of the complicated bursa beneath the obturatur internus, as it winds round the pully of the ischium. During life the case was thought sciatica, or disease of the hip-joint. We repeat, that surgeons are not sufficiently acquainted with the anatomy of the bursæ. The suprà patellar, and some of the other superficial bursæ are familiar to them? but the deeper ones, and especially the articular, are very imperfectly understood.

6. *Malformation of the Shoulder and Hip-joints.*—We extract some observations, which may be new to some of our readers, on these subjects.

"The shoulder-joint is sometimes so malformed, that the arm and hand are in a state of permanent pronation or supination, and were it not for other malformations, one would suppose the joint had been luxated at birth. I have not been able to get a *post-mortem* examination of this malformation. The treatment consists in applying pasteboard splints.

The whole arm is occasionally so shrivelled as to resemble the fin of a fish. A superfluity of digits is no uncommon malformation, particularly two thumbs; in this case the outer pollex should be removed by amputation.

The hip-joint is sometimes deficient in its acetabulum, the head of the os femoris resting on the dorsum of the os ilium, nearer its crista than in the normal state. This is an imperfect formation of the os innominatum from some obstacle to the evolution of the bones, and no original luxation of the joint. The children born with this malformation have been in good health, but there is a marked disproportional breadth of the hips, with projection of the trochanters, and obliquity of the thigh-bone. As the child advances and begins to walk, the deformity increases; and still more so, when the pelvis begins to enlarge, and the child undergoes longer and more fatiguing exercise Then the balancing

of the trunk on the pelvis, its anterior inclination, a projecting of the belly, apparent shortening of stature, circular movements of the transverse diameter of the pelvis, want of fixity of the heads of the ossa femorum, alternate movements, of elevation and descent of the head of the thigh-bone along the dorsum of the os ilium, all begin to be manifest.

When the sexual characters begin to develop themselves, the increase of the pelvis, more rapid and conspicuous in the girl than in the boy, renders in her the effects of this malformation much more apparent. Young females, from the play of the heads of the ossa femorum, become almost incapable of any great exertion, the heads ascending nearly to the cristæ of the ossa ilium; in those who are corpulent, pregnant, or dropsical, it amounts to an impossibility. The only palliative remedy is a broad belt round the pelvis, with iron supports down to the feet."

7. *Circular and Flap Amputations.*—The Edinburgh surgeons are known to be *Flappists*. Mr. Lizars makes no sort of hesitation in putting the circular mode hors de combat "The circular incision," says he, "is now abandoned, and if applicable any where, it is to that of the arm between elbow and shoulder-joints; the first incision should sweep down to the bone, as done in time of Celsus, and revived by Dupuytren, and not layer after layer of skin, superficial and deep muscles, as recommended by Allanson and Hey."

This is more positive than convincing. The circular method is very far from abandoned. It is almost universally practised in London, and extensively in France, to say nothing of other parts of the world. Malgaigne, whose Manual of Operative Surgery is in every body's hands, and is the best work of the kind, admits that, on the whole, the circular method is the best. So far as our own experience goes, we prefer it, as a general mode of proceeding.

8. *The Tourniquet superseded.*—"The tourniquet is now only used by operators of the old school, or those of the modern ignorant of anatomy." 206.

This is de trop.

We shall notice the succeeding part of our dexterous friend's system of surgery, when it appears. Mr. Lizars has acquired a high reputation as an operator and a teacher, and his opinions on many points are necessarily worth knowing.

The work of Dr. Burns is of a more elaborate character than that of Mr. Lizars. It is not simply devoted to the obvious phenomena of disease and to the treatment required for them; but it treats at length of the principles both of pathology and treatment, those generalizations so important yet so difficult to draw.

Mr. Burns remarks, in his Preface, that a work on surgery to be comprehensive, must be divided into three parts.

First, a detail and exposition of those particular actions and conditions which are connected with injuries and operations in general, and of those doctrines and principles which furnish the rules of practice. Second, a minute and distinct description, of the relative situation, and particular connexion, of parts which may become the seat of disease, or the subject of operation. This constitutes what has been called Surgical Anatomy, and it is just as essential to the surgeon for the purpose of information and direction, as maps and charts are to the traveller and navigator. Third, an inquiry into the nature and treatment of individual diseases and injuries, and the best and safest way, of performing particular operations.

The first volume is devoted to the first of these objects. It comprises eleven chapters, which are headed, in succession, Preliminary Remarks on Action—Of Inflammation—Of Mortification—Of Suppuration—Of Ulceration—Of Tu-

mors—Of Adhesion—Of Hæmorrhage and Wounded Arteries—Of Aneurysm and of the artificial means of restraining Hæmorrhage—Of certain States connected with, or produced by, Wounds and Injuries—Of the Management of the Constitution under disease and Injury.

The second volume carries out the remainder of our author's plan, and embraces the other objects proposed by him. The volume itself is intended, as he informs us, for two purposes:—First, to be a guide, or assistance, to the student, in the dissecting-room, enabling him, with one of the ordinary manuals, to trace the different parts of the body, with a view to their practical importance, and to acquiring a facility of finding them, when necessary, in the living subject. If employed for this purpose, it will be much for his advantage, that he mark the differences which may exist, in the individual he is examining. Second, to assist the surgeon in studying the nature of injuries, the relations of tumors, and in planning his operations.

It contains five chapters—the first, of the Anatomy of the Neck—the second, of the Anatomy of the Head—the third, of the Anatomy of the Clavicular Region, and Upper Extremity—the fourth, of the Pelvic Region—the fifth, of the Anatomy of the inferior Extremity.

In a short notice, it is impossible to present either a criticism or an analysis of so extensive a work. The first volume being mainly dedicated to principles their comprehensive characters forbid a barren sketch of them. The second volume being filled with details, their extent interferes similarly with the reviewer. The only mode we can adopt for giving an idea of the nature of the volumes and the manner in which the subjects are handed, is to take a chapter in the first volume, and enumerate the main points that it discusses, and then to take a chapter in the second volume, and expose its entrails in the same manner.

We will take the tenth chapter in the first volume. Its heads are—of shock and its different kinds—exhaustion—rallying—reaction—acute sensation or pain—irritation—different states of danger, and the principle to be followed in deciding on operations—fever—arteritis—phlebitis—inflamed lymphatics—neutritis—neuralgia.

Suppose we pitch on the second chapter in the second volume—on the Anatomy of the Head. It is devoted to the—tongue—its size, shape, &c.—structure—covering and papillæ—diseases—submaxillary gland—extirpation of—sublingual—disease of—tonsil and its diseases—parotid gland and its diseases—extirpation of—ear—nostril—lachrymal duct—frontal, and other sinuses—antrum and its diseases—orbit—lachrymal gland—eyelid—sac—nerves in the orbit—muscles of the face—articulation of the jaw, and dislocation—tumors—lips—facial artery—transversalis faciei, &c.—temporal and internal maxillary—epistaxis—opening the temporal artery—veins of the face—nerves—wounds.

In conclusion, we recommend those students and surgeons who wish to learn the sentiments of Dr. Burns, or to consult a very comprehensive treatise on the principles and practice of surgery to consult the work itself.

RECENT WORKS ON ANATOMY.

1. MANUAL OF DESCRIPTIVE AND PATHOLOGICAL ANATOMY. By *J. F. Meckel*, Professor of Anatomy at Halle, &c. Translated from the German into French, with additions and notes, by *A. J. L. Jourdon*, Member of the Royal Academy of Medicine at Paris, &c. and *G. Breschet*, Adjunct Professor of Anatomy at the School of Medicine, &c. Translated from the French, with Notes, by *A. S. Doane*, A.M., M.D. and others. In two vols. 12mo. 1838.

II. PRACTICAL AND SURGICAL ANATOMY. By *W. J. Erasmus Wilson*, Lecturer on Practical and Surgical Anatomy and Physiology. Illustrated with fifty engravings on wood, by Bagg. Small 8vo. pp. 492.

III. A TEXT BOOK OF HUMAN ANATOMY, DESIGNED TO FACILITATE THE STUDY OF THAT SCIENCE. By *Robert Hunter*, M. D., Professor of Anatomy, Andersonian University, Glasgow. Small 8vo. pp. 220. 1838.

IV. THE SCIENCE OF THE CEREBRO-SPINAL PHENOMENA ATTEMPTED. By *John S. Waugh*, M.D. Annan. London 1828.

V. OUTLINES OF HUMAN OSTEOLOGY. By *Warde*. Renshaw, London, 1838.

VI. THE SURGICAL ANATOMY OF THE PERINÆUM. By *Thomas Morton*, formerly one of the House-Surgeons of the University College Hospital. Large 8vo. pp. 80. 4 Plates.

VII. QUAIN'S PLATES. Fasciculi 62 and 63.

THE list of anatomical works is startling. We are certainly growing an anatomical people. Let us look at the works seriatim.

1. The merits and defects of Meckle's treatise are so well known that it would be idle to descant on them. But the English reader is now, for the first time, put in possession of the work. This was a desideratum which has been supplied. So far as we have glanced at it, the translation seems to be a good one.

2. Mr. Wilson is well known in London as a zealous practical anatomist and teacher. His manual contains many useful hints in the way both of teaching and of learning. The following brief quotation will give an idea of his plan and his plans.

"The *Aorta* arises from the left ventricle, at the middle of the root of the heart. It ascends at first to the right, then curves backwards and to the left, and descends on the right side of the vertebral column to the fourth lumbar vertebra. Hence it is divided into the ascending, arch, and descending aorta.

RELATIONS.—The *Ascending aorta* has in relation with it, in front, the trunk of the pulmonary artery, thoracic fascia, and pericardium; behind, the right pulmonary veins and artery; to the right side, the right auricle and superior cava; and to the left, the left auricle and trunk of the pulmonary artery.

Plan of the *relations* of the ascending Aorta.

In Front,
Pericardium.
Thoracic facia.
Pulmonary artery.

Right Side.	Ascending aorta.	*Left Side.*
Superior cava.		Pulmonary artery.
Right auricle.		Left auricle.

Behind.
Right pulmonary artery.
Right pulmonary veins."

3. Mr. Hunter's text book appears to be compiled with diligence and care.

4. There is no knowing where the cerebro-spinal system will carry us. The reflex function had gone pretty far when it led, in the hands of Mr. Grainger, to walking being merely the effect of the ground upon the shoe-leather. But Dr. Waugh, of Annan, rather bothers us. He has created a new science, with new

names, and whoever unwarily falls into the middle of it, will assuredly find himself in a strange land, and be accosted in an unknown tongue. We extract, at random, a passage.

"It may be known, then, that the unspecial perceptive oli-versal filaments, and the unspecial protective versal filaments, conducting unspecial influence from the convolutions of the right cerebral hemisphere, accompany each other from the places of anastomosis at the bottoms of these convolutions, to within a very short distance of the median plane of the cerebro-spinal apparatus. In the instance of the minor system of the corpus callosum, the two orders of unspecial versal filaments in question accompany each other as far as the curvilinear line on the right side of the median line of that corpus In the instance of the fornix another portion of those same two orders of unspecial versal filaments accompany each other as far as its right side. In the case of the anterior commissure, the same accompaniment takes place, till where the fasciculus of the anterior commissure leaves the mass of the right hemisphere. It may here be observed, that the most beautiful analogy prevails between the unspecial and special versal apparatuses of the primary cerebro-spinal ganglions, which are subservient to perceptive consciousness. As the unspecial perceptive oli-versal filaments accompany the unspecial protective versal filaments, for a certain distance from the unspecial grey tissue of the cerebral convolutions of the same side on which they originate; so the special perceptive oli-versal filaments accompany the special protective versal filament, for a certain distance, greater or less according to circumstances, from the special grey tissue in which they originate. This beautiful analogy assures me of the truth of the positions which it embraces. Its simple elegance will not be fully perceived till we come to treat of the special versal apparatuses of perceptive conciousness in their order."

We tremble for the fate of the "oli-versal" filaments. Men, we fear, will be prejudiced against them.

5. Mr. Ward's is, after all, the best account, so far as it goes, of the bones, that has yet been published.

As a sample, we may take at hazard the following simple account of the motion of the ribs, and their effects on the capacity of the thorax.

"If we examine in a skeleton the hoop formed by a pair of true ribs and costal cartilages, we shall find that it is inclined in two senses: 1st, the suture hoop is inclined downward and forward, from its spinal to its sternal attachment, so that its anterior is lower than its posterior portion; 2dly, each lateral segment of the hook is inclined downward and outward from the median plane of the body, so that the middle of the shaft of each rib is below the middle of a straight line connecting its extremities. To bring a rib thus inclined into a horizontal position, two things would be necessary: 1st, its anterior extremity must be raised to a level with its posterior extremity; and then its middle portion must be raised to a level with its ends. It is evident that the former of these actions would carry forward the anterior extremity of the rib and the sternum; thereby increasing the antero-posterior diameter of the chest; and that the latter would carry outward the middle of the rib, thereby increasing the transverse diameter of the chest; so that, performed simultaneously, they would dilate the cavity in both directions at once. Now each rib is provided with muscles by which its inclination with regard to the spine, and its inclination with regard to the median plane, are simultaneously diminished, all its parts being brought nearer to the horizontal plane in which its posterior extremity is situated. When we add that these muscles act during inspiration, and that their antagonists restore the ribs and sternum to their former position during expiration, the alternate dilatation and contraction of the walls of the thorax, are sufficiently explained; and we may proceed to consider how the same mobile walls are enabled to fulfil the condition required during all the more forcible actions of the muscles to which they give origin."

We have recommended this little work to our class.

6. Mr. Morton's book is also a good one. It comprises the recent information, and is likely to be very serviceable to young surgeons.

7. Of Quain's plates, we can only say that at present they maintain their character of excellence.

NATURAL HISTORY.

I. A HISTORY OF BRITISH BIRDS. By *William Yarrel*, F.L.S., V.P.Z.S. Illustrated by a Wood-cut of each species and numerous Vignettes. Part IX. Price 2s 6d.

II. A GENERAL OUTLINE OF THE ANIMAL KINGDOM. By *Thomas Rymer Jones*, F.Z.S. Professor of Comparative Anatomy in King's College, London. Illustrated by numerous Engravings on Wood. Part II. October, 1838.

OF the first of these works it is almost needless to speak. It supports its own and its predecessor's character—no mean praise. We wish we could inoculate all our readers with a love of natural history. Let them get these works at all events. They are a pleasant addition to any library.

This part of Mr. Jones's work presents to us the polygastrica—the acalephæ and the sterilmintha. This work was much wanted, particularly by the younger members of the profession, whose attention we strongly direct to it. As a specimen of the style, we quote a short passage on the luminousness of the acalephæ.

"We are equally at a loss to account for the production of the irritating secretion in which the power of stinging seems to reside, but it is observed that the tentacula seem to be more specially imbued with it than other parts of the body. Perhaps the most remarkable property of the acalephæ is their phosphorescence, to which the luminosity of the ocean, an appearance especially beautiful in warm climates, is principally due. We have more than once witnessed this phenomenon in the Mediterranean, and the contemplation of it is well calculated to impress the mind with a consciousness of the profusion of living beings existing around us. The light is not constant, but only emitted when agitation of any kind disturbs the microscopic medusæ which crowd the surface of the ocean: a passing breeze, as it sweeps over the tranquil bosom of the sea, will call from the waves a flash of brilliancy which may be traced for miles; the wake of a ship is marked by a long track of splendour; the oars of your boat are raised dripping with living diamonds; and, if a little of the water be taken up in the palm of the hand and slightly agitated, luminous points are perceptibly diffused through it, which emanate from innumerable little acalephæ scarcely perceptible without the assistance of a microscope. All, however, are not equally minute, the Beroes, in which the cilia would seem to be most vividly phosphorescent, are of considerable size; the Cestum Vederis, as it glides rapidly along, has the appearance of an undulating riband of flame several feet in length; and many of the larger Pulmonigrade forms shine with such dazzling brightness, that they have been described by navigators as resembling 'white-hot shot' visible at some depth beneath the surface. This luminousness is undoubtedly dependent upon some phosphorescent secretion, but its nature and origin are quite unknown."

Mr. Jones has our best wishes for the success of his work. Mr. Van Voorst, the spirited publisher of the series, deserves every encouragement.

CLINICAL REVIEW.

GUY'S HOSPITAL.

Guy's Hospital Reports. No. VII. October, 1838. Edited by *George H. Barlow*, M.A. &c. &c., and *James P. Babington*, M.A. &c. &c. 8vo. pp. 476. Six Plates. Highley, London, 1838.

The active officers of Guy's Hospital continue the experiment of publishing periodical Reports, and of endeavouring to fill an annual volume with their own papers and their own cases. They deserve the highest credit for their energy and zeal.

The present number contains the following articles:—

A Contribution to the Pathology of Congenital Deafness; by Edward Cock. On the Effect produced upon the Pulse by Change of Posture; by William Augustus Guy, M.B. Cantab. Observation on Intus-susception, as it occurs in Infants; by John Gorham. Cases and Observations in Medical Jurisprudence; by Alfred S. Taylor. Some Observations on the Causes of Strangulation in Hernia, and on the Causes of Death: and also on the Rules of Treatment which such considerations enforce; by T. Wilkinson King. Chemical Examination of the Liquor Amnii; by G. O. Rees, M.D. F.G.S., &c. On Diabetic Blood; by G. O. Rees, M.D. F.G.S. &c. Observations on Abdominal Tumors and Intumescence; illustrated by Cases of Disease of the Spleen: with Remarks on the General Pathology of that Viscus; by Dr. Bright. Physiological Observations on the Muscles of the Eye; by Bransby B. Cooper, F.R.S.

We shall not take the articles exactly in their order.

1. A Contribution to the Pathology of Congenital Deafness. By Edward Cock.

Mr. Cock starts with regretting, as many have done before him, that the ear still remains so much in the hands of quacks. The object of his communication is to help in taking it out of them. Passing over some observations on the little that is actually known of the causes of congenital deafness, we may allow Mr. Cock to state, that—

"Through the kindness of Mr. Watson and the Medical Officers of the Asylum for Deaf-and-Dumb, I have been enabled to inspect the bodies and examine the temporal bones of most of the children who have died in that institution during the last six years. The facts elicited from the dissection of the first six cases have already appeared in the Nineteenth Volume of the Transactions of the Royal Medical and Chirurgical Society. In three of these cases, I discovered in the organs of hearing such palpable deviations from the normal structure, as served to convince me that a congenital malformation does exist much oftener than has generally been supposed; and that a careful investigation of the auditory apparatus may, in many instances, throw light upon the pathology of deafness from birth. Since the publication of the Paper, several subsequent examinations have afforded some still more curious results, which may possibly open a wider field for speculation to the physiologist, as well as to the morbid anatomist." 291.

We may observe that out of six subjects examined, four presented lesions strictly congenital, and therefore bearing on the congenital deafness. In two instances, there was a partial deficiency of the semicircular canals. The ex-

tremities of these tubes opening into the vestibule were perfect; but the central portions were impervious, or, rather, did not exist at all. In the first case, the vertical and oblique semicircular canals were both impervious at their central portions. In this case only one ear could be examined. In the second case, both ears were examined. On the right side, the middle portions of the oblique and vertical canals were wanting, the bone presenting an appearance like that already described. On the left side, the horizontal and vertical canals exhibited a similar imperfection. The scala tympani, likewise, was terminated, at its larger extremity, by a bony septum, which separated it from the tympanum, and occupied the situation of the membrane of the fenestra rotunda.

In the third case, not a vestige was to be found of the fenestra rotunda on either side; the usual situation of the membrane being occupied by solid bone.

The temporal bones of this child were exceedingly large, although soft and spongy in texture. The cavities were more than usually capacious; and the Eustachian tubes presented a remarkable development, being three or four times larger than common. On one side, the aqueduct of the vestibule readily allowed the passage of a large bristle: on the other side, the canal could not be traced through the bone, although its two extremities were more than usually expanded.

And, in the fourth case, the aqueduct of the vestibule was large enough to admit the passage of a small probe.

Such are the main circumstances connected with the six cases related in Mr. Cock's former communication.

Since 1835, he has obtained from the Deaf and Dumb Asylum, the opportunities for seven additional post-mortem examinations.

CASE 1.—A boy died with fever and acute cerebral symptoms, when twelve years old.

Left Temporal Bone.—The tympanum was completely filled by spongy and highly-vascular granulations, which appeared to grow from the mucous membrane lining the cavity; and to derive their vessels, which were numerous, large, and injected with blood, from the same source. This adventitious growth also occupied the mastoid cells, extended into the Eustachian tube, and adhered closely to the membrana tympani and the chain of small bones: it had no malignant character. The petrous bone was remarkably ill-shaped, very narrow from before to behind; the jugular fossa exceedingly large and excavated, so as to encroach upon the tympanum and Fallopian canal; the latter of which was laid open towards the fossa, when the periosteum was removed. The groove for the superior petrosal sinus was very broad and deep: in fact, the petrous portion was so scanty in its dimensions, and presented so little solid bone, that it was evident, on viewing its exterior, that the semicircular canals could not exist in their perfect state. The meatus auditorius internus was represented by a narrow slit; and the portio mollis became pulpy and transparent, as it descended into the canal. On cutting open the bone, the labyrinth presented the following appearances. The auditory canal, instead of being terminated by the cribriform plate forming the base of the modiolus, opened at once into a cavity of a somewhat conical shape; communicating with the vestibule by a very large aperture; and also with the tympanum, by means of the fenestra rotunda; through which last, the vascular granulations already described had found their way. This cavity, in fact, represented the mere external shell of a cochlea, but without a vestige of modiolus, spiral lamina, or scalæ: the auditory nerve entered it, and apparently expanded on its walls. The vestibule, or what answered to it in situation was rendered irregular; on the one hand, by forming a continuous cavity with the imperfect cochlea; and on the other, by extending itself outwards so as to include that portion of bone usually embraced within the concavity of

the horizontal semicircular canal. Not a trace, however, existed of either the horizontal or the oblique canal: the anterior opening of the vertical canal alone was present; but the canal itself suddenly stopped, after having completed about half its natural course. There was no aquæductus vestibuli.

Right Temporal Bone.—The tympanum was occupied by an adventitious growth, precisely similar to that on the left side. The petrous bone was more regular in its external configuration. The aquæductus vestibuli consisted of a very large funnel-shaped canal; terminating, in the vestibule, by an oval opening, sufficiently wide to admit the eye of a small probe. The semicircular canals were perfect; and the vestibule natural as to size and form, but communicating, by a very large opening, with a cavity somewhat resembling that on the left side, and representing the shell of a cochlea which contained the rudiment of a modiolus (that is to say, the base shutting out the cavity from the meatus internus, and allowing the passage of the auditory nervous filaments), and an attempt at the formation of a spiral lamina, which, however, did not make a complete turn, and consisted chiefly of membrane, which disappeared on the parts becoming dry from exposure. The fenestra rotunda could hardly be said to exist.

Case 2.—A boy subject to epileptic fits, died at the age of twelve years. The temporal bones were exceedingly large, massive, and heavy, and the cancellated texture was entirely deficient in the petrous portion. The meatus externus, on both sides, was partly filled with dry inspissated cerumen, and the position of the membrana tympani was nearly horizontal.

Right Internal Ear.—The cavity of the tympanum was completely filled with dense fleshy granulations, adhering most firmly to the walls, completely enveloping and concealing the bones, adapting themselves to all the crevices and irregularities, and extending into the mastoid cells and the commencement of the Eustachian tube. A small quantity of thin purulent fluid escaped, when the roof of the tympanum was removed. The membrana tympani was exceedingly convex, being drawn inwards until it nearly touched the promontory; thus diminishing the size of the cavity, and pushing the bones out of their place, so that the extremity of the manubrium of the malleus and the long crus of the incus were in close contact, and carried to the edge of the fenestra ovalis. No vestige of the sides of the stapes was discoverable; but it might have been broken up in the attempt to clear the tympanum from the granulations which filled it. The entrance to the cochlea presented the ordinary appearance, when viewed from the vestibule, but terminated suddenly, in a blind extremity about a line from its commencement. Of the cochlea itself no trace existed, its situation being occupied by solid hard bone. The fenestra rotunda, when traced from the tympanum, terminated in a minute cavity; which might be considered as the rudiment of a scala tympani, and into which the granulations already alluded to had entered. The auditory nerve was remarkably hard and small, and was entirely distributed to the vestibule; that portion, which in the normal condition pierces the modiolus to supply the cochlea, being, of course, deficient.

Left Internal Ear.—The tympanum presented nearly the same appearance as on the right side; with this addition, that the membrana was closely adherent to the promontory, producing a still greater diminution in the size of the cavity, and a greater distortion of the bones from their natural situation. The incus was anchylosed to a little spicula of bone, which projected from the inner wall of the tympanum, just above the Fallopian canal. The labyrinth presented nothing unusual, if we except, that the modiolus of the cochlea was smaller than natural, and that the granulations from the tympanum had passed through the fenestra rotunda into the commencement of the scala tympani. The auditory

nerve was small and hard, by far the greater portion of it going to the vestibule.

CASE 3.—No lesion of the organ of hearing was discoverable.

CASE 4.—A girl, aged 13, died of phthisis.

Right Ear.—The tympanum partly filled with soft vascular granulations; a muco purulent fluid occupying what remained of the cavity. The Eustachian tube very large, and containing a quantity of semi-inspissated mucus. The cochlea, externally, was natural, but, internally, very deficient. On tracing the scala tympani from the fenestra rotunda, it was found to take about half a turn round the base of the modiolus, and then terminated in a blind extremity. The scala vestibuli, on the other hand, formed about one-third of a turn; and then opened into a cavity which constituted the remaining part of the cochlea, as represented by its external shell. In fact, the base of the cochlea alone was perfect, the remaining portion consisting merely of the cavity just mentioned: not only was the greater portion of the spiral canals deficient, but the blind extremity of the scala tympani prevented any continuity or communication between them.

The petrous bone, more especially in the neighbourhood of the tympanum, was unusually loose and cellular, presenting numerous irregular cavities, which apparently communicated with the tympanum, and were filled with the same muco-purulent fluid: they seemed a sort of extension of the mastoid cells.

Left ear.—Petrous bone irregular in shape; the meatus externus remarkably narrow, representing an elongated ellipse, when cut across. No external appearance of aquæductus vestibuli. The lining membrane of the tympanum thickened but not granular; the cavity, together with the mastoid cells and Eustachian tube, filled with soapy, adhesive, and slightly purulent mucus. The interior of the vestibule presented but four openings of the semicircular canals, instead of five; that which is common to the posterior extremity of the vertical, and the superior extremity of the oblique, being deficient. On tracing the vertical canal from its anterior opening, it was found to terminate, not by returning to the vestibule, but by becoming continuous with the upper part of the oblique canal, which latter opened below as usual. The two canals, thus united, formed one irregular tube, which extended across the superior and posterior part of the petrous bone. The cochlea presented much the same appearance as on the right side; the lamina spiralis making about half a turn round the base of the modiolus, and separating the scala tympani (which reached to about the same extent) from an irregularly-shaped cavity into which the scala vestibuli opened soon after leaving the vestibule.

CASE 5.—A boy, aged 11, died of phthisis. The entire temporal bones, but more especially the petrous portions, were most remarkable for their enormous size. In development, solidity, and weight, they exceeded any that Mr. Cock has ever seen. The external meatus was small; so were the Eustachian tubes. There was no stapedius muscle on the right side. These were the only alterations in the organ of *hearing*.

CASE 6.—A boy, aged 16, died of phthisis.

Both temporal bones were exceedingly massive, and hard in their texture; and very ill-formed, as regarded their external configuration. The tympana were irregular in shape, and their parietes more than usually rough. The Eustachian tubes were small, and irregularly contracted.

Case 7. A boy aged 12.

The examination was unsatisfactory. The bones were steeped in dilute muriatic acid for the purpose of softening them. But this altered the cochlea so completely, as to vitiate all conclusions.

Such are the cases related by our author. His physiological remarks are sensible, but contain no novelty. He sums up the appearances discovered in the preceding cases, in the following manner:—

"1. An adventitious growth filling up, and thus obliterating more or less completely, the cavity of the tympanum, enveloping the chain of bones, and encroaching upon the openings of the Eustachian tube, mastoid cells, and fenestra rotunda.

2. Deficiency of the fenestra rotunda; thus rendering one extremity of the labyrinthine canal solid and immoveable, instead of yielding.

3. Partial or complete deficiency of the spiral canals of the cochlea.

4. Preternatural enlargement of the aquæductus vestibuli.

5. Deficiency of the semicircular canals.

6. Unnatural solidity or hardness of the temporal bone."

1. His remarks on the vegetations occupying the tympanum seem to us to be very judicious

"I think," he says, "that they would be all sufficient to occasion deafness, by preventing the transmission of vibration from the external ear to the labyrinth; while their presence at the entrance of the Eustachian tube, and at the foramen rotundum, would certainly destroy the function of two parts which are essential to the exercise of the sense of hearing. I must, however, leave the question open, as to whether this adventitious growth was coeval with birth or the period of infancy; or whether, on the other hand, it was a subsequent formation, depending upon and accruing from a prior defect in the sense of hearing, from some unknown cause;—whether, indeed, it supervened upon deafness, and was merely an effort of Nature to obliterate a cavity whose function of conveying and modifying vibration had become useless, in consequence of the previous inefficiency of that part of the organ by which the vibratory oscillations were to become converted into sound, and appreciated as such by the sensorium."

2. "With respect," he goes on to observe, "to the deficiency of the fenestra rotunda—or, in other words, the substitution of solid bone in the place of the membrane which, in the natural state, occupies that opening—such a malformation must necessarily prevent all motion in the fluid of the labyrinth, by depriving the labyrinthine canal of one of its yielding extremities, and thus cutting off from the expansion of the auditory nerve that medium of communication (viz. the motion of the water) through which it receives its impression. A similar effect will be produced where the cochlea is entirely wanting; or where the scala vestibuli and scala tympani are merely rudimentary, and do not become continuous with each other."

Mr. Cock's speculations on the effects of the preternatural enlargement of the aquæductus vestibuli may perhaps be dismissed without farther observation. Nor need we pause to weigh his remarks on the use of the semicircular canals, or the effects of their malformations With one remark we quite coincide.

"I utterly reject the idea, that these malformations are mere coincidences, which ought not to be considered as having a reference to the imperfection or annihilation of the sense of hearing—that they are, in fact, analogous to abnormal deviations in other parts of the body, which are discovered after death, but which produced no symptoms during life, as regarded the functions of the organ in which they occurred."

While we would not have more weight attached to these cases than they will reasonably bear, we think it unphilosophical in the extreme to pronounce ex cathedrâ that such important malformations as they indicate, were unconnected with the deafness. Such dogmatic views are calculated to arrest discovery.

We hope that Mr. Cock will persevere in his laudable attempt to throw light on congenital, as well as on other forms of deafness by his pathological investigations.

II. On the Effect produced upon the Pulse by Change of Posture. By William Augustus Guy, M.B. &c. &c.

Influence of Sex, Age, and Period of the Day.—Experiments made with a Revolving Board.

In the last number of these Reports, Dr. Guy reported the results of experiments on the effect produced by change of posture on the pulse of healthy males. He now reports similar experiments made with the view of ascertaining how far that effect is modified by sex and age. The experiments themselves are numerous, were made with care; and are reported with minuteness. But we must content ourselves with simply transcribing their results. These are stated thus:—

"1. In healthy females of the mean age of 27 years, in a state of rest, the number of the pulse is, standing, 89; sitting, 82; and lying, 80: the difference between standing and sitting being 7 beats; between sitting and lying, 2 beats; and between standing and lying, 9 beats. When all exceptions to the general rule are excluded, the numbers are, standing, 91; sitting, 84; and lying, 80: the difference between standing and sitting being 7 beats; between sitting and lying 4 beats; and between standing and lying, 11 beats. The same differences, expressed fractionally, are as follow;—inclusive of exceptions, 1-13th, 1-41, 1-16th; exclusive of exceptions, 1-13th, 1-21, 1-8th.

2. In females, as in males, the extreme are very remote from the mean results. Thus the greatest difference between standing and sitting is less than 1-4th, the least 1-107th, of the frequency standing; the greatest difference between sitting and lying is 1-9th, the least 1-83rd, of the frequency sitting; whilst between standing and lying the difference may be more than 1-4th, and as little as1-23rd, of the frequency standing.

3. The exceptions are as follow:—To the general law, that the pulse is less frequent sitting than standing, there is 1 exception in 10 experiments: to the general law, that the pulse is less frequent lying than sitting, there are 2 exceptions in 5 experiments: to the general law, that the pulse is less frequent lying than standing, there is 1 exception in 10 experiments. The total number of instances in which 1 or more exceptions to general rules occur, is 46 per cent. or nearly 1 in every 2.

4. In females, as in males, the effect produced by change of posture increases as the frequency of the pulse increases.

Ths following propositions relate to the differences between the male and female pulse.

1. The pulse of the adult female exceeds in frequency the pulse of the adult male of the same mean age, by from 10 to 14 beats. In the erect posture it is more frequent by about 1-8th, in the sitting posture by about 1-6th, and in the recumbent posture by more than 1-5th.

2. Though the pulse of the adult female is more frequent than the pulse of the adult male of the same mean age, by 1-8th in the erect, and 1-5th in the recumbent posture, the effect of a change from the erect to the recumbent posture in the male is greater than the effect of the same change in the female by more than 1-3d.

3. The effect of change of posture on any given frequency of the pulse is

much greater in the male than in the female; and the disproportion is more marked in early youth than at the adult age.

4. The exceptions to the general rule are more numerous in the female than in the male, in the proportion of 4 to 3.

The following propositions refer to the influence of age:

1. The effect of change of posture is less in early youth than in the adult; and the modifying influence of age is greater in the female than in the male.

2. The exceptions to the general rule are more numerous in early youth than in the adult.

The following proposition refers to both sexes, and to all ages:—

The exceptions to the general rule are more numerous, as the effect of change of posture is less."

Influence of the Period of the day.

From Dr. Guy's experiments, he infers that the effect of change of posture is greatest in the forenoon and least in the afternoon; the effect in the evening being the mean between the other two; and *the effect produced by change of posture on the same frequency of the pulse in the afternoon, forenoon, and evening respectively, is as the numbers* 8, 9, *and* 10. Though the difference is not so great as it seemed to be before the varying frequency of the pulse at different times of the day was taken into account, it is sufficiently well marked to deserve attention: and if it should be confirmed by a larger number of observations, it will add to our knowledge of a very curious and interesting subject—the diurnal changes which take place in many, and probably in all, the more important functions of the human body.

Experiments with the Horizontal Board.

The object was to do away with that muscular exertion by which *change* of posture is affected. The subject of experiment was securely fastened to the board, and the plane of this admitted of all inclinations, between a perpendicular to the horizon *above* it, and a perpendicular to the horizon *below* it.

1. "The persons whom I submitted to experiment were conveyed from the erect posture, and supported at angles of 60°, 45°, and 30°, and then placed in the horizontal position. The pulse was carefully counted in each of these postures. Observations were made on twenty-three persons; of whom, some were Englishmen, and others German boys. I was at the time residing at Heidelberg. The mean age of the subjects of the experiment was 16 years. In the erect posture, the average frequency, in round numbers, was 89; when placed at an angle of 60°, 86; at an angle of 45°, 83; at angle of 30°, 78; and in the horizontal posture, 75. Thus, then, the differences between each two consecutive positions were 3, 3, 5, and 3 respectively; and the total difference was 14 beats, being about 1-7th of the frequency in the erect position. The difference between the results of these experiments, and of those in which the posture of the body was changed by the action of its own muscles, is, as we have already observed, less than one beat. The above correspondence between the two classes of experiments proves, indisputably, that the effect produced upon the pulse by change of posture is not due to the muscular contraction by which the posture is changed; whilst the experiments which were detailed in a former Essay leave little doubt that it must be attributed to the muscular effort by which the body is supported."

2. "The body was conveyed, as before, from the horizontal posture, through angles of 30° and 45°, to the inverted position, with the head downwards and the feet raised in the air. 21 out of the 23 persons experimented on were placed at an angle of 30°, and the pulse fell on the average 1 beat: 18 out of the 23

were placed at an angle of 45°, and their pulse fell from 77 to 76½, or ½ a beat: 12 out of the 23 were placed perpendicularly, with the head down, and the feet raised, and their pulse fell on the average 1½ beats, namely, from 78½ to 77, the total difference between the horizontal and inverted posture being 3 beats. Now this difference is so slight, that it scarcely deserves so long a notice; but when we come to examine the experiments more closely, we find that the small amount of difference is due to the great number of exceptions to the general rule of decrease. Thus, when the body was placed with the head downwards, at an angle of 30°, there were 8 exceptions in 23, or more than ⅓, in which the frequency of the pulse was increased; when placed at an angle of 45°, there were 5 such exceptions in 18, and 5 in which the pulse had the same frequency as in the former posture; and when completely inverted, there were 4 cases of increase in 12, and 2 in which the pulse had the same frequency as when the body was inclined at an angle of 45°. Now, we have already seen that, even in a transition from the erect to the horizontal position, the exceptions to the general rule were numerous; and we could scarcely expect them to be less so in the several inverted postures, even if the same causes, whatever they may be, were alone in action. But other causes came into play, amongst which, fear was not the least influential. The very novelty of the position was, to more than one of the subjects of the experiments, a source of apprehension; whilst in others, the distress produced was too great not to be accompanied by some anxiety."

"If we exclude all exceptions to the general rule, the average decrease, when the body was placed with the head downwards, at an angle of 30°, was 5; at an angle of 45°, 3; and completely inverted, 5 beats. If, in order to ensure still greater accuracy, we take those cases in which, without exception, there was a decrease up to any given position, we shall find, that at an angle of 30°, the decrease was 5; at an angle of 45°, 1; and completely inverted, 7. There were only two instances in which there was a continual decrease, without any exception to the general rule; and these occurred in two brothers who had been long in the habit of standing on their heads. In each of these the difference between the erect and inverted postures was 30 beats; the mean difference between the erect and horizontal postures being 15 beats, and that between the horizontal and inverted also 15 beats. When inclined at an angle of 30° with the head downwards, the mean decrease was 6½ beats; at an angle of 45°, 1½; and completely inverted, 7 beats"

On the whole, then, there can be no doubt whatever that the natural tendency of the inverted position of the body is to diminish the frequency of the pulse.

Dr. Guy appears to be a very zealous and intelligent experimenter.

III. OBSERVATIONS ON INTUS-SUSCEPTION AS IT OCCURS IN INFANTS.

Mr. Gorham's attention was first particularly drawn to intus-susception, by the circumstance of a child, a few months old dying with hæmorrhage from the intestines, and intus-susception with inflammation of certain contiguous portions of the bowel being discovered after death. Not long afterwards, the following case occurred in Mr. Gorham's own practice.

Case. Mrs. Valence's infant, at four months and five days' age, has been healthy since birth; with the exception of having one day had ten or eleven motions, which were greener than usual. The infant has lived almost entirely on breast-milk; but, three days ago, the mother was induced to give it some panada, under the supposition that the milk was not nourishing, or in sufficient quantity. The infant was generally good, and cried but little: she appeared to be well up to yesterday morning, when at eight o'clock she passed a natural

motion, and was in apparent health till two P. M., when she was sick, and vomited immediately after having taken the breast. This symptom has continued ever since. Between seven and eight of the same evening, it was first observed that the evacuations per anum consisted of blood, and nothing else: three napkins were soiled during the night, and in the morning, Mr. Gorham was requested to visit the infant.

The quantity of blood passed amounted to about three or four teaspoonsful; the skin over the entire body was pale and hot; there was no emaciation; the infant lay quiet for a few minutes; and then cried out with an expression of pain in the countenance. The pupils were dilated; there was slight cough; pulse averaged, in the half-hour, 200 in the minute; the vomited matter consisted of milk, part of which was curdled. The abdomen felt soft and hot. On introducing the little finger into the rectum, nothing abnormal could be felt; on withdrawing the finger, some dark-coloured, thickish blood followed, in quantity about a teaspoonful and a half. The infant had vomited six or eight times within the half-hour. An enema, consisting of starch and olive oil, was now injected cold, but returned almost as fast as it was given. It was repeated with a similar result. A large poultice was now directed to be applied to the abdomen; and a quarter of a grain of extract of conium, in a teaspoonful of camphor mixture, was directed to be given every four hours, with a grain of calomel. The child passed no more blood, but she always vomited after taking the breast, convulsions came on during the night, and, at nine A.M. next morning, a fit proved fatal to her.

Dissection six hours after death. There were four intus-susceptions of the small intestines, which were easily reduced; and the peritoneum covering these parts was slightly red. The lower portion of the ileum was of a deep-red colour, and intus-suscepted within the ascending colon; which latter was also swallowed within the transverse arch. The appendix cœci was highly injected; and it and the cœcum were occupying the upper part of the invagination. The mucous membrane of the inflected ascending colon was beautifully injected, villous, soft, and constricted in many places; that of the invaginated ileum was intensely red, villous, and extremely irregular. The appendix cœci was of a deep reddish-brown colour, and slightly blue in many places.

The stomach was empty, and appeared to be of a healthy colour. The small intestines were generally healthy in appearance, and, for the lower three-fourths, contained a yellowish watery fluid: the upper fourth was empty. All that portion of colon which was below the intus-susception, as well as the containing parts, was of a dark-bluish colour. The mesenteric glands were enlarged, some being of the size of large beans.

Mr. Gorham, after relating this case, proceeds to offer some lengthened observations. He divides intus-susception into that unattended with inflammation, and that attended with it. Most persons are of opinion that the former, in infants, is a very common and not a dangerous affection. We shall therefore dismiss it. But this is not the case with:—

Inflammatory Intus-susception.

Mr. Gorham remarks:—

"With regard to the circumstances necessary to its continuation, a remarkable difference obtains between intus-susception at the ileo-colic valve and that at any other part of the intestinal canal: for, as it has been stated that the outer fold is active, so will it continue to drag within it the *contained* intestine, provided that this latter always remain passive. And here appears to me to be the cause of that most uncontrollable invagination that occurs when the ileum is pushed into the colon: for it is not necessary that any preternatural contraction

should be formed in the ileum ere it can enter the large intestine: in order to this, its normal size is sufficient. How different, on the other hand, is the case of invagination from spasm! It is in the nature of spasm to be paroxysmal—to go and come quickly: thus, affording a chance of the reduction of intus-susception, from the relaxation of spasm, and the comparative activity of the inner fold, and this in a direction contrary to that of the invagination. Intus-susception, then, at the ileo-colic valve, occurs without spasm, without a preternatural contraction of intestine, and, consequently, without a chance of reparation from any subsequent dilatation that might have occurred, had spasm existed."

Mr. Gorham presents a table, which gives in a concise form, the particulars of nine cases of intus-susception occurring in very young infants. This table he analyses, and offers the principal inferences that may be drawn from the facts on which it is founded.

Symptoms.—In all the cases on record, with two exceptions, the child is said to have been in good health prior to the attack.

Vomiting was almost a constant symptom. The pulse did not appear to afford sufficient grounds for any satisfactory inference. A tumor could be detected in the abdomen in some of the cases. There were strong indications of pain, such as violent paroxysmal screamings, drawing up of the legs, and elevation of the upper lip, &c.—The constant symptom, however, was, the passing of blood per anum, in various degrees of purity; never indeed contaminated with feculent matter, but chiefly with mucus. The blood appears to be recent, and fluid, in many cases; and in quantity varies considerably.

"In Mr. Muriel's case it was excessive, more than a teacupful of blood having been passed. The disease, in fact, amounted to hæmorrhage from the intestines, of which the causes were not known before death; insomuch that the infant was completely blanched and cold ere the fatal termination occurred. In my own case, I must say that I was struck with the appearance of this sort of discharge per anum, in a patient so young. It was not that of common dysentery; where the intestine seems reluctantly to supply its blood, to tinge the mucus which is generally present in that disease. It came on suddenly in infants who had previously enjoyed good health. It had nothing to do with diarrhœa; for this was not, neither had been, present in any of the cases. Neither had it occurred during a peritonitis; in which disease, sometimes, blood is passed. Purpura was not present; for this is rare in infants so young; neither could hæmorrhoids or organic disease be detected."

"In all the fatal cases reported, the same intestine, viz. colon, had formed the *containing* fold; and this had grasped the *contained* parts, (viz. the lower portion of the ileum, the vermiform process, the cœcum, and more or less of the inverted colon), which it urged onwards by its natural peristaltic motion, as if it were endeavouring to expel them by the anus. This it had almost accomplished, in Dr. Lettsom's case: in my own, the contained portions had not progressed so far: in Dr. Ash's case, Mr. Blizard's, and Mr. Langstaff's, it had proceeded as low as the sigmoid flexure. Nor has the effort only been made, but the expulsion has actually been accomplished in a most astonishing manner; for the invaginated portion has sometimes sloughed, and been discharged per anum, while the agglutination of the parts has preserved the continuity of the intestinal canal. Thus, in a case related in Duncan's Commentaries, eighteen inches of small intestine were voided per anum. Three similar instances occur in M. Hevin's Memoir; 23 inches of colon came away in one of them, and 28 of small intestines in another. Other cases occur in the Physical and Literary Essays; in Duncan's Annals; and in the Medico-Chirurgical Transactions, where Dr. Baillie states that a yard of intestine was voided. In 1823, M. Bush recorded a case, in which from 15 to 18 inches of the ileum were discharged from the anus; and recovery was effected on this principle."

Though all ages may be affected with the disease, yet infancy and childhood

are particularly subject to it. In adult life the symptoms are more variable. Thus, in a case reported by Mr. Bullin, of Fleet Market, of an adult, in which the ileum and cœcum were found invaginated within the colon in a manner precisely similar to that of those mentioned in this paper, the chief symptoms were, suppression of stools, and violent pains in the abdomen, quite unattended with vomiting.

As as been already stated, the most frequent seat of the affection is at the termination of the small intestine in the cœcum. The next most usual situation is the ileum—the least the jejunum.

The immediate cause would seem to be spasm of the invaginated part of the intestine. The exciting causes are probably such as would produce that spasm.

The characteristic symptoms have been pointed out, but may be recapitulated:

When an infant under a year old is seized with symptoms of strangulated hernia, the cause will most frequently be *intus-susception.*

When dangerous intus-susception exists, its situation will most frequently be at the termination of the ileum in the cœcum.

Hæmorrhage, with absence of all fæcal evacuations from the intestine of an infant, is rare, unless it have for its cause *intus-susception.*

We will not say that Mr. Gorham has totally avoided the fault of generalizing very boldly on premises which cannot be considered sufficient to establish positive conclusions.

Treatment.—Bleeding, quicksilver, forcible clysters, a long bougie, anodynes, strong purgatives, the warm bath, blisters, emetics, have all been recommended and practised, some with more and some with less advantage. It has been proposed to open the abdomen, and disentangle the intus-suscepted gut—a proposal which may have been acted on once or twice with success, but which, if generally adopted would certainly be most hazardous. Mr. Gorham speaks with favour of the method of treating the disease by *inflation.* This is effected by introducing the nozzle of a common bellows into the rectum, and gradually blowing up the intestines. Three cases in which this plan succeeded have been reported in the American Journal of Medical Science. The following is a condensed account of them.

Case 1.—The patient was a female, aged 26. After having uneasy sensations in the stomach, obstinate vomiting succeeded, which consisted, at a subsequent period, of yellow matter. A violent screwing pain was also complained of, situate between the sternum and umbilicus: it came on in paroxysms, and ended in vomiting. Calomel, jalap, castor-oil, laudanum, the warm-bath, and effervescents, were all useless; and after five days passed without a dejection, the common bellows was used; and it is stated, that "as soon as air entered the rectum the countenance lost its anxiety, and the patient said she felt quite relieved. In a minute she passed a stool; and complete recovery resulted."*

Case 2.—The patient was a male, aged 35. The symptoms were, first, dry retching, and hiccup; afterwards, vomiting of a large quantity of green bile, mixed with feculent matter: violent pain was complained of in the umbilical region; the pulse was small, frequent, and irregular. Superficial examination detected no peculiarity in the form of the abdomen, till the fourth day, when an unusual fulness and firmness was first discovered in the right iliac region; but the hand lying upon the spot, a paroxysm of pain occurred, and an elongated tumor was felt to rise, with an erectile motion. Purgatives of croton-oil combined with laudanum, fomentation, enemata of tobacco infusion, and copious

* American Journal of Medical Science, XXVI. 542.

bleeding, were all of no avail; and on the fifth day, as a last resource, the bellows was used. After the first inflation, there was no occurrence of violent pain; the patient said he felt much easier, and wished to pass a motion: a large quantity of air, however, came away, and about a gill of very fetid bloody water. In about five hours after this, two copious dejections were passed; and complete recovery ensued.*

Case 3.—The symptoms were vomiting of a dark, fetid, oily fluid; hiccup; with severe pain round the navel: no motion was passed for four days, at the end of which time the bellows was used. Six dejections followed in the course of the day. The patient recovered.

The method should be tried in any severe case. It cannot well do harm, and although it is by no means certain that the preceding cases were examples of intus-susception, yet they are calculated to give encouragement.

" Mr. Finch, a general practitioner, residing at Greenwich, informs me he has treated cases successfully in the following manner. Injections of warm thin gruel are used; and if any advantage be expected to be derived from them, they must be prevented returning. In order to this, Mr. Finch causes the pipe to assume a conical shape, by binding lint, or some soft material, round it. The piston is then pressed with considerable force; and the return of the intestine is known to have taken place by the want of resistance suddenly communicated to the hand. Mr Finch has treated two cases successfully in this manner."

The action of the enema would be similar to that of inflation. But, probably the latter would be most effectual.

Mr. Gorham's paper is not undeserving of perusal.

Dr. G. O. Rees communicates to this number of the Reports, two chemical analyses—one of the liquor amnii—and one of diabetic blood.

IV. CHEMICAL EXAMINATION OF THE LIQUOR AMNII. By G. O. REES, M.D. &c.

The analyses hitherto made of this fluid have varied. Dr. Rees has examined it in four instances. It was procured with all precautions for its purity by Mr. C. W. Lever.

1. Labour induced at seven months and a half, by passing a female catheter through the os uteri, and drawing off the liquor amnii.

EXAMINATION OF LIQUOR AMNII.

Strongly alkaline.—Sp. grav. 1008.6.

Contained in 1000 parts:

Water	983-4
Albumen (traces of fatty matter)	5.9
Albuminate of soda } Chloride of sodium }	6.1
Animal extractive soluble in water and alcohol, urea, chloride of sodium	4.6

Traces of alkaline sulphate.

2. Patient died of phthisis at about the seventh or eighth month of gestation.

EXAMINATION OF LIQUOR AMNII.

Strongly alkaline.—Sp, grav. 1008.

Contained in 1000 parts:

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* American Journal of Medical Science, XXX. 556.

Water		984.98
Albumen (traces of fatty matter)		1.80
Extract soluble in water.	Salts 2.80 Organic matter, principally albumen, from albuminate of soda, 3.22	6.02
Extract soluble in water & alcohol	Salts 2.80 Organic matter, principally lactic acid and urea, 4.4 ..	7.20

3. Again obtained at seven months and a half, from patient No. 1, by the same means.

EXAMINATION OF THE LIQUOR AMNII.

Strongly alkaline.—Sp. grav. 1007.

Contained in 1000 parts.

Water		986.8
Albumen (traces of fatty matter)		3.2
Aqueous extract	Salts 3.2 Organic matter, viz. albumen, from albuminate of soda, 1.2	4.4
Alcoholic extract	Salts 3.8. Organic matter, viz. lactic acid and urea, 1.8	5.6

4. Labour induced at seven months and a half, and liquor amnii drawn off by a female catheter.

EXAMINATION OF THE LIQUOR AMNII.

Strongly alkaline.—Sp. grav. 1007.

Contained in 1000 parts:

Water		986.8
Albumen (traces of fatty matter)		2.4
Aqueous extract	Salts 4.2 Organic matter, viz. albumen, from albuminate of soda, 2.0	6.2
Alcoholic extract	Salts 3.0 Organic matter, viz. lactic acid, and urea, 1.6	4.6

"The salts, both of the aqueous and alcoholic extracts, consisted of chloride of sodium and carbonate of soda, with minute traces of an alkaline sulphate and phosphate. In the salts of the aqueous extractive, the carbonate resulted from the incineration of an albuminate; and in the alcoholic extractive, from the decomposition of a lactate, by the same operation.

The salts obtained from the aqueous extractive in analyses Nos. 2 and 3 were not entirely soluble in water. The insoluble matter, on examination, proved to be phosphate of lime; which must either have been held in solution with the albuminate of soda, or have resulted from the decomposition of an alkaline phosphate at a red heat; some soluble earthy salt being present, to effect such decomposition. I lately observed the existence of phosphate of lime in the aqueous extractive of a specimen of blood drawn from a diabetic patient; and am inclined to think that further observations will shew a similar result in other albuminous fluids."

The salts observed floating in the liquors are composed of caseous matter, containing cholesterine.

"On examining the analyses, it will be observed that the liquor amnii varies greatly in proportional constitution in different individuals, at the same period

of utero-gestation; which shews, that, like perhaps all the secretions of the body, it is affected by the temperament and diathesis of the mother. The specific gravity of the secretion, however, varies but little in the four specimens; which is possibly a precaution on the part of nature to preserve a medium of fixed power, to oppose the motions of the fœtus in utero."

V. ON DIABETIC BLOOD. By G. O. REES, M.D. &c. &c.

It is only lately that the presence of sugar has been demonstrated in diabetic blood, a fact that was long denied by chemists. Mr. M'Grigor, of Glasgow, has shewn, or seemed to shew, that sugar is present, not only in the blood and urine, but likewise in several secretions and excretions. Ambrosiani relates a method by which he succeeded in extracting it in a crystalized state. But the mode which Dr. Rees has adopted will yield sugar of considerable purity, though it will not enable us to determine with precision the weight. We shall therefore present an account of this plan of procedure:—

"The mass of blood* is to be evaporated to dryness, over a water-bath; the dried mass to be comminuted, and digested for several hours in boiling water: the aqueous solution is to be filtered off, evaporated to dryness, and the dried residuum digested in alcohol of sp. gr. 0.825: the alcoholic solution so formed is to be filtered, or carefully poured off, evaporated to dryness, and the dry mass treated several times with rectified ether, which dissolves out urea, and also some fatty matter; leaving behind the sugar, in admixture with osmazome and chloride of sodium: this mass, on being dissolved in alcohol, and the solution allowed to evaporate spontaneously in a flat glass dish, affords mixed crystals of alkaline chloride and diabetic sugar; which are easily distinguishable from each other, and allow of being separated mechanically, by shaking them up in alcohol, when the chloride sinks; and the sugar, being principally collected above, may be removed, for examination, by careful use of the spatula: the alcohol must not, of course, be allowed to remain long in contact with the crystals, as it would re-dissolve them. It is a matter of surprise to me, that sugar has not been long ago detected in the blood of diabetic patients, though not separated from it; for the alcoholic extract of the serum, when mixed with water, will, after a few days, give off carbonic acid; which, in addition to the sweetish taste, and I may add, syrupy smell of the evaporated alcoholic extract, is a sufficient evidence of the presence of sugar. I subjoin the analysis of 1000 grains of diabetic serum, obtained for me by the kindness of Dr. Bright. The sp. gr. of this patient's urine was 1048; and the contents of the serum as follows:—

Water	908.50
Albumen (yielding traces of phosphate of lime and oxide of iron, on incineration)	80.35
Fatty matters	0.95
Diabetic sugar	1.80
Animal extractive, soluble in alcohol, urea	2.20
Albuminate of soda	0.80
Alkaline chloride, with traces of phosphate Alkaline carbonate, and traces of sulphate, the results of incineration	4.40
Loss	1.00
	1000.00."

"* 12 ounces were used in these experiments."

Dr. Rees observes that, on comparing this analysis with that of the serum of healthy blood, we perceive a great excess of matters soluble in alcohol, while the albuminate of soda is rather less than in health. The alkaline salts are also in very small proportion, being only 4.40 gr. in 1000 grains of serum, while in health they amount to from 7 to 8 grains per 1000.

VI. Some Observations on the Cause of Strangulation in Hernia, and on the Causes of Death, and also on the Rules of Treatment, which such Considerations enforce. By T. Wilkinson King.

This Paper, which displays much industry and reflection on the part of Mr. King, contains an application of the numerical method to the elucidation of some points connected with Hernia.

There is a table of 100 cases, compiled from the best authorities, which required surgical aid on account of urgent symptoms. The principal deductions from the data thus collected and compared are as follows:—

1. *Most herniæ exist for years, before they become subject to dangerous strangulation.*

Thus on analysing the Table, we discover that:

In 2 cases, the duration is not mentioned.
.. 3 or 4 cases we might determine, at once, that acute strangulation was the marked condition.
..15 cases, the hernia is said to be "old."
..18 cases . . . . . of "some, several, or many years'," duration, or to be "adherent in the sac."
..46 cases, the duration is defined in years; and the mean for the whole of these is about 18 years. The minimum, about 4; and the maximum, 44 years.
..15 cases, the duration may be inferred within a year or two; and the mean for these I make to be 25 years. The maximum near 60.

100

Hence, of 61 cases, the mean duration is about 20 years; and of 33 cases more, we may say they were indefinitely old: so that 94, out of 98, were in various degrees, "old."

Making every allowance for some imperceptible source of fallacy, it will be readily admitted that the antiquity of herniæ which become strangulated is surprizing. Mr. King advances some ingenious reasons for concluding that the cause is to be found in the morbid states and diminished vital powers of the old herniary protrusion. There is, no doubt, much force in this, whether it does or does not explain the whole of the phenomena.

2. *Causes of Death.* These are calculated from unpublished records of above forty fatal cases of hernia. In the majority of instances the patient died of peritonitis.

The following is a tabular view of thirty-eight cases.

In 1, the hernia was reduced by taxis: death by *peritonitis:* the gut red.
1 .. .. *peritonitis?* recovering.
1 .. .. sac and all, the stricture remaining.
1 .. .. returned by operation .. ..
3 .. .. was not returned: no operation: no gangrene; *peritonitis.*
6 .. .. was returned by taxis, but ruptured: death by *peritonitis.*
12 .. .. operation: *peritonitis:* the portions variously dark.

4 .. .. gangrene extensive.
8 .. .. was exposed: not returned: artificial anus, or the like: death by *peritonitis*.
1 .. .. was returned; the omentum divided: death by *internal hæmorrhage*.

The object of Mr. King is to dwell, which he does, on peritonitis, in a low and unhealthy form, being the prevalent cause of death. On this he insists. He remarks too, that in the fatal cases, there are usually organic changes of more or less importance in the great viscera—such changes as occur after the meridian of life, and such as, though not incompatible with seeming health, are, by no means favourable to any material reparative effort.

Yet we hardly know what to say to this strong position of Mr. King's. The general opinion with respect to the issue of most fatal cases of hernia after operation, is, that death is owing to a sort of "paralysis" of the bowel. A part of it is found dark, and the general evidences of peritonitis, to any extent, are absent. We must own that this hypothesis has never been very satisfactory to ourselves, and we are rather inclined to attribute death to low inflammatory action, and the depressing influence on the system of a portion of gut seriously injured.

Mr. King makes some observations on the treatment of hernia, at which we may just glance.

"In the *reduction of herniæ*, I have certainly seen degrees of force successful that I should be very unwilling to use: and if it be near the truth, that about one-fourth of the deaths by hernia follow the simple taxis, it may be allowed that there is less reason to trust in this means so implicitly as we are taught, whether we regard the employment of force or not. Of course, nothing can ever militate against the early and careful use of the taxis: but may we not conclude, that delay, repetition, and violence, in connexion with the actual return of hernia by taxis, would appear more reprehensible than is commonly thought?

I find included in the Table of Fatal Cases, eight in which the taxis was the cause of death. One was a reduction '*en bloc*:' a ninth was the same thing (but for the operation); and one only, I think, of the six in which the bowel was ruptured, was connected with some previous accidental injury. One case was a merely dark bowel, well returned: a tenth case was similar, but erysipelas complicated the peritonitis: and, if my memory does not betray me, I have also known one or two other cases of fatal taxis, in which the bowel was returned entire, and no distinct gangrene was discoverable after death."

We may observe, that a great improvement has taken place, of late years, in the treatment of hernia in reference to this very point. The taxis is neither so much nor so long employed as formerly. Still we think, with Mr. King, that even at present it is used too often, too long, and too forcibly. The great reason for its being so is, probably, the general reluctance on the part both of surgeon and patient to the knife. Yet there can be no question that the success of the operation has been much in the ratio of its early performance.

Mr. King enters a strong protest against the use of purgatives after the operation. This is a difficult point to decide, for a good deal is to be said on both sides. We do not mean that any thing rational can be said in support of incessant or violent purgation, but we are not quite so sure that, when the bowel does not soon evince a tendency to act, gentle aperients are objectionable in theory or injurious in fact.

Mr. King concludes, and so shall we, with the following summary:—

"First—Most herniæ being of old standing, before they become seriously strangulated, this result is not attributable to the state of the sac, but to that of the bowel; in which, defective nourishment and power of vessels leads to more ready tumefaction;—and all this seems attributable to the age and the organic deterioration belonging to it.

2dly—The common and chief danger is from a peculiar and unhealthy kind of peritonitis; the consequence, probably, of the same constitutional decay or decline of organs which induced the strangulation

3dly—The above facts lead to the conclusion, that prompt surgery, to remove the cause of inflammation, and the most cautious medicine to obviate and not excite inflammation, and to add nothing to the oppressed condition of the patient, are indications even more pressing than has been commonly maintained, at least among authors and the generality of surgeons."

VII. CASES AND OBSERVATIONS IN MEDICAL JURISPRUDENCE. By ALFRED S. TAYLOR.

These are on Poisoning by Oxalic Acid—on Rupture of the Diaphragm—and on Open Foramen Ovale

We see nothing in the Report of a case of poisoning by oxalic acid to call for particular notice.

SURVIVAL AFTER EXTENSIVE RUPTURE OF THE DIAPHRAGM.

Rupture of the Diaphragm has been pronounced mortal, and a very exact, and formidable train of symptoms have been chronicled as appertaining to it. With what truth unqualified observations of this kind have been made or are to be taken, may be judged from the following case.

E. L. aged 40, a sailor, was admitted into the hospital, March 7, 1838, under the care of Mr. Morgan. His look was healthy, his body spare; but his general health had been always pretty good. Six months previous to his admission, he had fallen on the deck of a vessel, from a great height; in consequence of which, his ankle was severely injured, and his ribs were fractured. He suffered most from his ankle: a portion of bone had come away, and it had continued bad up to the present time. When examined, it was found to be in a sloughy state; and for this he was admitted. He did not complain of much pain; his appetite was good; and his bowels were regular.

His ankle became so much worse that amputation was performed on the 2nd of May, and in spite of all attentions, he sank, and died on the 4th of June.

Subsequently to the operation, his chest was examined several times with the stethoscope, and the respiratory murmur was found rather deficient at the apices of both lungs; but still there was nothing remarkable in the sound of his voice, nor in the act of respiration before death. The chest, on percussion, gave out a good sound everywhere, except over the lower part of the left lung. The deceased stated, that many years ago he had met with an accident, by which he had fractured some of his ribs on the left side.

Dissection.—"When the chest was opened, the heart was observed to be small, and to be situated rather to the right of the median line. The most remarkable and unexpected appearances were seen on the left side of the chest. The left lung, which was much contracted, lay superiorly, and behind. Its upper portion was pale doughy, and crepitant: its middle portion, unusually divided from the rest, was pale, soft, and completely hepatized. Inferiorly, this organ was of a dark red colour, empty, and compressed. The cause of this abnormal condition now became obvious. Two thirds of this side, or nearly one half of the whole cavity of the chest, was filled up by the distended stomach, and a long curve of the arch of the colon. These parts, which had protruded through an aperture in the diaphragm, were covered with a great deal of thin omentum. It was found, on further examination, that the opening, which was two-and-a-half inches in extent, was situated in the muscular part of the diaphragm, anteriorly, and a little to the left of the œsophageal opening. The margin of the aperture, to which the omentum was in one or two places strongly adherent, was opake, yellowish, firm, and even. The cardia was just within the opening, and the

pylorus also posteriorly. The ascending colon ran in on the right side, and a little posteriorly; while the descending colon ran out anteriorly. The bowel, in a contracted state, to the extent of about twelve inches, was folded vertically, on the right end of the stomach, which was much distended with air. This organ contained some dark-coloured liquid: its surface was reddened, and a good deal softened. It was covered externally, in great part, by the omentum. The fifth rib had been fractured near its middle, and the broken end had pierced the two layers of pleura:—patches of fibrin were found on the lung. The omentum adhered to the broken rib and surrounding parts. The third rib had been fractured, and much displaced. The fourth and sixth ribs were simply broken, and united. These injuries were of old standing. The viscera of the abdomen presented no particular appearances."

OPEN FORAMEN OVALE.

It is now pretty generally understood that patency of the foramen ovale may exist without any obvious symptoms. If there be no other malformation it is probable that little or no inconvenience would ensue, unless cardiac disease and interruption of the balance between the respective portions of the organ supervene. Mr. Taylor relates two cases, in one of which there were no symptoms, and in the other there were indistinct ones; but in the latter, the pulmonary artery was small, and the left ventricle more developed than the right. We examined the body of an adult the other day, who had presented, so far as we could learn, no symptoms of cardiac disturbance, and in whom the foramen ovale was quite open; the finger could be passed from one auricle to the other with facility.

Mr. Taylor quotes some observations of Billard's, with which we shall conclude: "Billard's observations, made on 89 cases, have entirely deprived this change of all value, as a sign for the determination of the survivorship of a child. Thus, he found the opening entirely closed—once in 18 subjects of one day old—four times in 22 subjects of two days—three times in 22 subjects of three days—twice in 27 subjects of four days. Hence we see that it was found more frequently closed on the second and third days—*i. e.* in 1-5th and 1-7th of the cases—than on the first and fourth days—*i. e.* in 1-18th and 1-13th of the cases To make this change of any use, as evidence of survivorship, the cases of its closure ought to increase, in a uniform ratio, in proportion to the period which the child lives after it is born: but here we see, that it was closed twice as frequently on the *second* and *third* days, as on the *fourth*."

VIII. OBSERVATIONS ON ABDOMINAL TUMORS AND INTUMESCENCE; ILLUSTRATED BY CASES OF DISEASE OF THE SPLEEN. WITH REMARKS ON THE GENERAL PATHOLOGY OF THAT VISCUS. By R. BRIGHT, M.D., F.R.S., Physician Extraordinary to the Queen.

We are glad to perceive that our able friend Dr. Bright still contributes zealously to these Reports. His present paper, as may be seen from its heading, is dedicated to the pathology of the spleen.

Dr. Bright observes very pertinently that both the situation and the obscurity attending the functions of the spleen conspire to render the diagnosis of its morbid alterations difficult. He gives a sketch of the position, structure, and probable office of the viscus, on which we see no necessity for entering.

The alterations of the organ to which Dr. Bright adverts are:—

A. ALTERATIONS OF THE SUBSTANCE OF THE SPLEEN.

1. *Simple Congestion.*—The result of over-distention, and of accumulation of blood in the texture of the spleen to that extent which the proper tunic and the peritoneum will permit.

The spleen, in this case, retains its natural structure; and is, for a time at least, capable of being completely relieved. This condition of the spleen is probably often produced by repressed perspiration, and sudden or long-continued cold: it occurs, in a more permanent way, after some continuance of intermittent fever.

2. *Congestion with Enlargement, and probably partial Organic Change—the Spleen still apparently Able to Discharge its Function.*—In this state of disease, although the viscus is obviously and often greatly enlarged, yet, from the fact, that the constitution does not materially suffer, that the countenance remains healthy, and that the spleen is subject to occasional fluctuations as to size, there is reason to believe that portions, at least, of the viscus, and most likely the whole, partially admits the usual passage of the blood.

3. *Fleshy Hardness.*—The organ is completely altered in its texture and characters: it becomes firm to the touch, cutting with as much resistance as an half-ripe apple, and the cut surface yielding the lustre of a firm damson-cheese; and sometimes, the cut surface presents numerous opake whitish granules, apparently from thickened cellular membranes. It is probable that this condition is the result of chronic inflammation, or of frequent congestion; but as the spleen is often not materially enlarged, it happens that, in the present state of our knowledge, we have no means of ascertaining its induration during life.

4. *Fleshy Hardness, with Enlargement.*—In this state, the spleen often attains to a prodigious size, filling up the whole left side of the abdomen It produces very little constitutional irritation, and chiefly injures by its bulk, and its tendency to favour serous effusion. It is astonishing with what rapidity this enormous growth occasionally takes place; but in this respect we are liable to be deceived, for it is attended by so little pain, that, in many cases, the increase has been taking place, gradually, long before some accidental circumstance leads to its discovery. In young children this form of disease is more frequent and fatal than in adults. It often begins at the age of two or three months, and may attain a great size, being traceable into the pelvis, and far to the right side. It is often attended with the appearance of petechiæ all over their cadaverous and pale bodies. Such children seldom live above a year, or two or three; and fall victims to emaciation, and often to mesenteric disease.

5. *Softening.*—"This condition may exist in various degrees, and may depend on different causes. It is sometimes rather the result of rapid change after death than of disease. Where the colour of the organ is that of a deep venous blood, probably congestion and cadaveric change may be inferred; and where a lighter lilac colour, or a mottled red and lilac, is observed, it has been supposed to bespeak some form of inflammatory action."

6. *Inflammation.*—"How much of the enlargement, and the permanent hardening and softening, of which I have just spoken, may be the result of inflammation, and how much of congestion often repeated, may be matter of doubt; but that the spleen is subject to inflammation in its substance, like other organs, is certain: and although, from its peculiar character and colour, it is not easy to point out its appearance under recent inflammatory attacks, we have reason to suppose that certain alterations, with regard to its general vascularity and its consistence, must be so produced; and, perhaps, as I have said, the red and mottled lilac colour, accompanied with a degree of turgescence in the organ, indicates a state of inflammation."

7. *Suppuration.*—Dr. Bright has seen this two or three times. The spleen,

under such circumstances, is apt to contract adhesions with neighbouring viscera; and either form a kind of shut sac by their assistance; or ulceration may effect the discharge of the abscess into some of the hollow viscera.

8. *Gangrene* occasionally happens.

9. *Tubercles.*—"The substance of the spleen is occasionally sprinkled with genuine tubercles. They are often very regularly distributed through the whole substance; and, whether more or less frequent, seem to occupy every part equally. They are sometimes solid and hard; but very soon incline to soften at their centres, and early present the appearance of curdled matter contained in little cysts. The tubercles in the spleen are generally, but not always, accompanied by similar deposits in other organs, particularly the lungs and mesenteric glands: and the tubercular diathesis, in very young children, more frequently shews itself in the spleen than in persons of more advanced age; and seems to bear proportion rather to the disease of the glandular system, than of the lungs."

10. *Malignant Disease.*—Both the scirrhous and cerebriform tuber sometimes appear in the spleen. It displays its usual tendency to form rounded masses, and gradually insinuates itself extensively into the substance of the organ.

11. *Melanosis.*—A fine preparation of this deposit in the spleen is exhibited in the military museum of Fort Pitt. We have seen a case of the same kind.

12. "There is another form of disease, which appears to be of a malignant character, though it varies from the more usual forms of malignant disease; and which has been particularly pointed out by Dr Hodgkin, as connected with extensive disease of the absorbent glands, more particularly those which accompany the blood-vessels. The whole of these absorbent glands, or large masses of them, become large and firm; without any tendency to suppuration, as in ordinary scrofulous disease; or to soften, as in cerebriform disease; and, at the same time, the spleen becomes more or less completely infiltrated, throughout its whole substance, with a white matter of almost the appearance of suet. This matter insinuates itself into the cellular structure of the spleen; but it is no easy matter to point out what particular portion of the structure receives it. A section of the organ seems to shew, from the irregular forms assumed, that it fills a cellular structure, and, in some degree, takes its shape from the cells into which it enters; having less tendency to assume the form of regular globular masses or tubera than other malignant disease."

13. *Fibrinous Deposits, most probably from Extravasated Blood.*—In several cases, says Dr. Bright, it has been observed, in the examination of bodies, that the spleen has presented, when first brought into view, in the middle of its structure, a large mass, or sometimes two masses, of a yellow fibrinous matter, of uniform consistence. In some cases, these have had all the appearance of being the remnants of blood, thrown out, either like an apoplectic clot, or from the rupture or laceration of the spleen: they have sometimes presented, towards their edges, some appearance of an unconverted clot: they have not appeared to be in any state of active progress: they have generally been larger on the part seen externally, diminishing inwards, as might be expected if they had filled up a fissure or rent in the substance. In some cases, the tunics of the spleen have not been distinctly traceable; in others, they have seemed uninjured.

14. *Bony Deposits.*—Small rounded masses of bone are now and then found in the very centre of the spleen. In the only case that Dr. B. has seen, he found them also in the mesenteric glands. This coincidence is the more re-

markable from similar coincidences in the case of malignant disease, and of the peculiar deposit just described.

15. *Cellular Degeneration.*—"There is an occasional appearance presented by the spleen; which I have also seen both in the liver and the kidney, where cells are developed, as if in the cellular membrane, filled with serous fluid. From these appearances, we should be inclined to suppose that they were of little importance, and only likely to interfere with the functions of the organ when they have occupied a much larger portion of it than I have ever witnessed."

16. *Hydatids.*—Not so often witnessed in the spleen as in the liver."

17. *Laceration.*—An occasional result of violence, and more likely to happen if the spleen is turgid at the time of the injury.

"There are instances of laberation taking place without external injury; and the late Dr. Babington related to me a case where he had examined a patient after death, in whom the spleen had been completely detached, and was found loose in the pelvis. In that case, most violent sickness had taken place; and was believed to be the cause, not the consequence, of the spleen being torn from its attachment."

18. *Supernumerary Spleens.*—These are common enough. Dr. Bright has never seen a deficiency of spleen altogether.

19. *Purulent Deposits in the Spleen.*—We observe that Dr. Bright makes no mention of these. They cannot be viewed merely in the light of ordinary suppuration. We have seen such deposits several times.

B. ULCERATIONS OF THE TUNICS OF THE SPLEEN.

The peritoneal covering of the spleen, like the peritoneum elsewhere, may be vascular, from inflammation or congestion: it is subject to ecchymosis, adhesion, fibrinous deposit on its surface cartilaginous deposit, and bony deposit. It may also be covered with tubercular matter, and with different forms of malignant growth.

1. *Vascularity.*—This is not so obvious, nor so common, as in many other parts.

2. *Ecchymosis.*—This is most frequently the result of accident, blows, and falls, accompanied by contusions of lacerations of the organ; but, besides this, it is sometimes seen as the result of disease; as when, in some cases of dropsy, the peritoneum has extensively put on the hæmorrhagic tendency; and this is more particularly favoured by organic changes in the spleen and liver.

3. *Adhesion.*—A common consequence of inflammatory action in the spleen.

4. *Fibrinous Deposit.*—The surface of the spleen is often found covered with fibrinous deposit, when inflammation has existed in the peritoneum; for, owing to its dependent position when the patient is lying on his back, it happens that the deposit has an opportunity of accumulating about it, and fixes itself permanently upon it.

5. *Cartilaginous Deposit.*—"The frequency of this occurence is somewhat peculiar to the spleen; for there is no other organ so often found to be covered with a partial cartilaginous coating. The convex surface is the most frequent seat of this appearance. Sometimes the whole is covered with an even, shining coat of cartilage; at other times, it is distributed in masses of larger or smaller size, with intervening spaces; and sometimes it will be found nearly a quarter

of an inch in thickness. This deposit seems to belong to the peritoneal coat, in the substance of which, or on its substance, it is probably formed: and it does not materially interfere with the elasticity of the proper tunic; so that I have seen a spleen covered with a coating of cartilage of extraordinary thickness, which had contracted so as to bring the cartilaginous covering, which was incapable of contracting, into numerous folds. It is probably owing to the situation of the spleen favouring the accumulation of fibrin on its surface, and the peculiar and constant motion to which it is subject, in accordance with the motion of the stomach, and its own distention and contraction, that these cartilaginous patches are so frequent on its surface." 408.

6. *Bony Deposit.*—Occasionally an extension of the preceding change leads to the formation of plates and spicula of bone in portions of the cartilage, or even of a complete bony case.

7. *Cicatrices.*—It is not unusual to see appearances like scars, from healed lesions, upon the surface; and these sometimes penetrate quite into the substance. There is no reason to doubt that these are, then results, either of accidental injuries, or of inflammatory and, in some cases, perhaps, suppurative action.

8. *Tubercular Deposit.*—When the tubercular diathesis is strong, and the serous membranes take on the action, or, as more frequently happens, when the newly-deposited products of inflammation receive the tubercular deposit, the spleen is often covered, either by a coating of such matter, or by innumerable miliary tubercles.

9. *Malignant Deposit.*—The peritoneal coat of the spleen, and the cellular membrane beneath it, receive the different forms of malignant growth; sometimes the pendulous cysts and tubera, sometimes the creeping flat circular deposits, and sometimes the general even deposit of this kind.

Such is the circumstantial account which Dr. Bright presents of the morbid alterations of the spleen and its envelops. He proceeds to offer a sketch, of necessity a brief one, of their symptoms.

c. SYMPTOMS.

Dr. Bright observes, that, as we are ignorant of the function of the spleen, functional disturbance, the usual clue to organic alteration, lends us no assistance here. But, he goes on to remark:—

"From experience we know, that, not unfrequently, certain splenic diseases are concomitant with a peculiarly unhealthy, sallow, anæmial character of countenance: we also know, that, not unfrequently, an hæmorrhagic tendency is an accompaniment of such disorders: but neither of these are sufficiently defined; nor are they sufficiently limited to affections of the spleen, to furnish more than a clue in the investigation: and probably the local symptoms are those to which we shall turn with the greatest advantage. The local symptoms are pain, tenderness on pressure, and tumors. The pain is seldom acute, unless the peritoneal coat of the organ is inflamed; and then, owing to the proximity of so many other parts, as the heart, the lungs, the diaphragm, the stomach, the kidneys, the colon, it is very difficult to localize; although, by the method of abstracting one by one of the organs, in proof of the lesions of which certain other symptoms are wanting, we may come to the conclusion that the pain belongs to the spleen. There is a dull and tensive pain sometimes complained of; but this, in general, does not occur till the tumor is already capable of being felt. The tenderness induced by pressure seldom leads us to the exact seat of disease, before the situation and circumstances of the tumor have already

sufficiently explained its character. In most cases of splenic disease, there is neither pain nor tenderness; but when the organ is inflamed, it becomes intensely tender. The tumor is the most decisive indication; and in many cases it is scarcely to be mistaken: the character is, a smooth, oblong solid tumor, felt immediately beneath the integuments, proceeding from under the ribs on the left side, a little behind the origin of the cartilages; often advancing to the mesial line in one direction, and descending to the crest of the ileum in the other; often filling the lumbar space, at its upper part. This tumor is very generally moveable; feels rounded at its posterior part; and presents an edge more or less sharp in front, where it is often notched and divided by fissures. If effusion takes place into the peritoneal cavity, a thin layer of fluid is early felt between the integuments and the tumor, but the intestines are not at any time found passing before the tumor."

It is to be regretted that the symptoms only wear a decisive character, when organic lesion has proceeded far.

The chief tumors, continues our excellent and able author, which may be mistaken for an enlarged spleen, are chronic abscess of the integuments—scirrhous thickening of the stomach—enlargement of the left lobe of the liver—diseased omentum—feculent accumulation in the colon—diseased kidney—ovarian dropsy—hydatids.

a. Chronic Abscess beneath the integuments may counterfeit splenic enlargement. But, we should imagine, that no well-informed surgeon or physician, could, if careful, be misled.

b. Scirrhous Thickening of the Stomach.—This may occasion a tumor which, from its being obviously deeper than the integuments, and descending from below the margin of the ribs, affords the subject of doubtful diagnosis; more particularly, as scirrhous attacking the substance of the stomach, and especially the left extremity, is often quite unattended by vomiting; while, at the same time, it is apt to be attended by a sallowness of complexion, not unlike that which bespeaks splenic disease. In this case, one of the best distinctive marks will be found in the sound elicited by percussion; which, when the stomach is so diseased, is usually clear and sonorous; while the substance is still harder than the enlarged spleen.

c. Enlargement of the Left Lobe of the Liver.—In this case, the margin of the liver may be traced running towards the right side; while the bilious tinge of the skin and of the urine assist in the diagnosis.

d. The omentum may be diseased, being either corrugated into a mass, or having scirrhous or scrofulous tubercles developed in its structure. In this case, the tumor much less obviously descends from beneath the ribs—cannot be traced backwards,—extends across the abdomen—or is rough, knotted, hard, and uneven.

e. Feculent accumulation in the descending colon and left portion of the arch assumes nearly the situation of the enlarged spleen. The diagnosis must be sought in the history and the result of treatment. We must not, without the most persevering employment of medicines, conclude that the intestines have been emptied.

f. The kidney sometimes advances towards the left hypochondrium, and presents a tumor nearly in the situation of the enlarged spleen; but here we shall find, by tracing it backwards towards the loins, that its chief bulk is situated much further back, and that it is much more fixed; so that, if the patient be placed upon his hands and knees, it does not fall forwards with any freedom. On careful examination, by percussion at different times, we shall find that there is reason to conclude that the intestine lies between the tumor and the integuments of the anterior part of the abdomen when the kidney is enlarged, which is not the case with the spleen: besides all which, the history will most likely

connect the tumor with some such peculiarities in the urinary secretion as will seem greatly to guide our diagnosis.

g. Ovarian tumors assume the greatest variety of shape. A knowledge of the fact that they may counterfeit enlarged spleen, and the general diagnosis of ovarian tumors will prevent a mistake upon this point.

h. The elastic feel and rounded form of hydatids will generally distinguish them from enlarged spleen, even when the situation they hold would seem to lead us to a wrong conclusion. They are, however, sometimes attached to the spleen itself.

Dr. Bright relates with more or less circumstantiality and minuteness twenty-eight cases, illustrative of the preceding observations. The extent to which we have already gone, precludes our entering on the details of these particular facts. We must refer such of our readers as would wish to see them to the volume of Reports. The few remarks with which the paper ends admit of a more special notice.

On reviewing, says Dr. Bright, the cases selected as forming a fair example of those which occur in practice where the spleen is implicated, we perceive, that, in the great majority, that organ merely partakes with others in some general state of derangement, and does not itself become a separate object of treatment. In other cases, the changes in structure are so apparently casual, as neither to be capable of detection, nor, if detected, to admit of any remedial measures. Of the few which remain, the principal diseased conditions are, the congested state of the organ, its consolidation, its inflammation, and its laceration from external violence.

Dr. Bright after apologising for the length of his communication, winds up with the following remarks:—

"I may observe generally, in reference to splenic disease, that it is probable that the spleen is greatly influenced by the derangement of many of the other organs of the body; and therefore its treatment will often depend on the regulation of their functions: for we cannot doubt, that whatever acts decidedly on the circulating system, must in some degree influence the spleen; which obviously, from its structure and appearance, receives large quantities of blood, as subsidiary to the processes of sanguification or circulation. Still, however, it is by no means an organ easily susceptible of diseased action, and withstands the effects of injurious agencies to a very considerable extent. Probably the spleen sympathizes in a particular manner with the skin, suffering from suppressed perspiration and cold and damp applied to the surface. It also appears to be affected by certain states of atmosphere, which act as a poison upon the system, evinced particularly in countries subject to marshy exhalations. It also probably suffers from interruption in the functions of the hepatic, the renal, and the absorbent systems, as seen in the organic evidence of their diseases, and partakes of the irregular distribution of blood, caused by the diseases of the heart and arteries

From reflecting on the frequent combinations of these and other morbid states with splenic disease, we perceive, more exactly, the mutual relations and unions existing between them; and this is always an interesting light in which to view disease. The chief points of approach or contact to which our attention is directed, are the occasional intermixture of splenic disease with disease, more or less extensive and confirmed, of the absorbent system; the depressed state of circulation occurring in severe affections of the spleen; the coincidence of splenic with hepatic disease; its connexion with derangements of the peritoneum; and some relation, though probably only collateral, between that state of the kidneys which produces albuminous urine and derangement of the spleen. By holding these and such like points in our minds, we shall comprehend, more fully, the possible value of the knowledge to be derived from following out the history of the derangements of the spleen, than we should by simply considering

the morbid states of an organ of which so little is known with certainty: for the enumeration of morbid conditions can, at best, only be viewed as forming an alphabet for the construction of a language, into which we may hereafter translate the complicated and obscure legend of disease."

We think it almost unnecessary to add that we think this a highly interesting paper.

IX. Physiological Observations on the Muscles of the Eye. By Bransby B. Cooper, F.R.S.

The precise actions and uses of the oblique muscles of the eye have been a subject of dispute and difficulty to physiologists. Mr. Cooper has made four experiments, and offered some remarks with the view of assisting in the elucidation of the subject.

A. *Superior Oblique.*—The action of this muscle is to direct the pupil downwards and outwards, and to draw the globe of the eye forwards: thus antagonizing the recti.

B. *Inferior Oblique.*—"The use of this muscle is, to direct the pupil upwards and outwards, and to assist in drawing the globe forwards. The opinions, however, which are given by different authors on the action of this muscle, vary, perhaps, more than in the description of the influence of any other muscle in the body; which circumstance may probably be attributed to a want of attention to the degree of contraction of the muscle during the period of examination; for it will be found in the dead subject, that if the inferior oblique be only slightly drawn towards its origin, the pupil will be directed upwards and outwards; but that if it be forcibly pulled, so as to equal its supposed most perfect contraction, the eye will be made to revolve on its own axis, and the pupil will become directed upwards and inwards;—an experiment which accounts, in my opinion, for the incongruity which is found in the published accounts of the influence of this muscle on the direction of the eye. It is very difficult, if not totally impossible, to judge of the action of the oblique muscles, and the effect of their contraction upon the eye, in the living animal: although most authorities agree in the accounts they give of their influence upon the organ of vision, still none have explained by what kind of experiment or observation they have arrived at their conclusions."

C *Experiments on Rabbits.*—Before he made any actual experiments upon rabbits, Mr. Cooper first carefully dissected the muscles of the eye, and the nerves which are distributed to them in the rabbits, to ascertain if there were any anatomical reasons why an analogy should not be drawn, in the use of their muscles, with those of the human subject; and could discover none, beyond the existence of the retractor muscle of the globe, common to most quadrupeds. The straight muscles bear, in every respect, a close resemblance to those of the human subject. The superior oblique muscle, also, is very similar in its attachments and direction: arising from the posterior part of the orbit, passing forwards towards the inner angle of the eye, and there becoming tendinous, it runs through a fibro-cartilaginous ring, and is then reflected backwards, at a very acute angle; and again becoming muscular, is inserted into the sclerotic coat, beneath the superior straight muscle, and posteriorly to the great circumference of the globe.

The inferior oblique muscle in the rabbit does not bear so strong a resemblance to the corresponding muscle in the human subject as the other muscles of the organ of vision. It arises, broad and fleshy, from the most anterior in-

ternal and inferior part of the orbital cavity, takes its direction downwards along the floor of the orbit, and then passes upwards, outwards, and backwards; expanding, as it terminates, to be inserted in the outer part of the globe, posteriorly to the insertion of the recti muscles: it seems, however, that some few of its fibres pass towards the anterior part of the sclerotic coat. In proportion to the size of the globe of the eye, this muscle is larger than in the human subject, is more deeply seated within the orbit, and has a broader attachment to its inner wall.

On pulling the muscles with the blades of the forceps in the direction of their course of action, Mr. Cooper invariably found that:—

On acting on the superior oblique, the point of insertion of this muscle was drawn upwards, forwards, and inwards: the globe of the eye, at the same time, turning on its own axis, and somewhat projected forwards from the orbiter cavity, had the pupil directed downward and outwards, corresponding with the description usually given of the natural action of this muscle.

Acting in a similar manner on the inferior oblique muscle, its point of insertion was made to roll from without inwards, and slightly from behind forwards, directing the pupil upwards and outwards. If, however, the force were still increased, but yet not apparently beyond the natural contraction of the muscle to one-third of its length, the pupil was made to roll under the eye-brow, so as to be turned inwards;—a direction, however, which is greatly increased, if the eyelids be brought in contact, as might be felt by the globe rolling under the fingers.

Mr. Cooper having carefully dissected the muscles of the rabbit, and adopted these simple means of determining their action, next divided, with every possible precaution, the muscles in the living animal.

"The following were the results, as presented in five experiments which I performed; in each of which the superior oblique muscle was divided in the one eye, and the inferior oblique in the other. Invariably, a considerable difference is observed with respect to the degree of prominence of the two eyes: that one in which the superior oblique muscle had been divided never presented the same degree of prominence as the eye in which the inferior oblique had been cut through, seeming as if it were really preternaturally drawn into the orbit; while the eye in which the inferior oblique had been cut through looked as if projected; which, however, I think, is only attributed to the contrast between the two. The whole globe of the eye, on the side on which the superior oblique is divided, becomes depressed, as if resting on the floor of the orbit, the aspect of its cornea and iris rather dull, the pupil somewhat smaller and slightly turned inwards, and the power of vision, as far as I was capable of judging, impaired.

It is to be observed, that the retraction and depression of the globe form the principal results of the division of the superior oblique muscle. Some may be disposed to dwell on the slight direction inwards of the pupil; and contend. that the preponderating influence of the inferior oblique now produces that inversion; but it seems to me, that the combined action of the adductor and inferior oculi muscles, having lost the moderating influence of the superior oblique, would necessarily give this prominent direction to the eye; for the inferior oblique, at any rate, would have a tendency to direct the pupil upwards, whatever may be the dispute as to the direction outwards or inwards.

On the division of the inferior oblique muscle shortly after the experiment, and as soon as the animal had become quiet so as to enable us to examine the position of the eye, the globe appeared much projected from the orbit, and raised towards its roof, the pupil being directed outwards and slightly backwards. This condition of the organ followed as the result of every experiment I performed; nor did any change of position in the eyes take place, although some of the animals were kept a week or ten days after the experiment.

The power of vision seemed always most considerable in the eye in which the

inferior oblique muscle had been divided, as was proved by the efforts the animal made to avoid any foreign body projected towards it: and, indeed, the manner in which it seemed capable of rolling the eye upwards and inwards, to avoid injury, leads me much to doubt the opinions of those who consider the obliquo muscles as the involuntary safeguards to the eye.

The general deductions which may be drawn from the result of these experiments are, that the oblique muscles, when acting together, suspend the eye-ball in a central position in the arbiter cavity, moderate the retracting influence of the four straight muscles, and, when acting in succession, without being restricted by the influence of the recti, they roll the eye on its own axis, drawing the globe forward, and at the same time tending, in a great degree, to extend the sphere of vision. The latter use appears to me a fair inference, from the great loss of mobility the eye sustains after the division of either of the oblique muscles. In one or two of the rabbits I divided both the oblique muscles in the same eye; the result of which experiment was, the permanent retraction of the globe within the orbit, its depression on the floor of that cavity, the contraction of the pupil, without, however, any lateral direction. I am aware that the precise direction given to the pupil by the contraction of either of these muscles has not been proved by the foregoing experiments; as, upon the division of one of them, the eye is not left controlled by the action of the other alone, but must necessarily partake of the influence of the recti muscles. Much, therefore, I feel convinced, is yet left to be done by the pathologist rather than by the experimentalist."

We cordially agree with Mr. Cooper, and we think that physiology is under obligations to him for his observations.

This concludes the present number of the Reports before us. We have presented a complete epitome of its contents, and it cannot be considered as otherwise than creditable to the officers of Guy's Hospital.

Hæmatology.—M. Magendie's Lectures on the Blood.

We have long entertained a great respect for the genius and talents of our Parisian confrere, M. Magendie. Ever since he cured that terrible disease, hydrophobia, by injecting warm water into the veins of a non-hydrophobic patient—and painted the theatrical portrait of cholera at Sunderland, we were convinced that the French physiologist was a genius of the first water. That terra incognita of physiologists and physicians—the Blood—is just the sphere for an esprit fort, like that of Magendie, to revel even to luxury! It is indeed—

> A wild where weeds and flowers promiscuous shoot,
> A garden tempting with forbidden fruit.

And if a Magendie does not cultivate it to perfection, he is not the man we take him for. To use another metaphor:—this terra incognita will furnish a lever by which the modern Archimedes of medicine may capsize every physiological and pathological system hitherto erected, without the trouble of constructing a new one in their place. It will prove a sea in which the Solidists, like the Hosts of Pharaoh, will be swallowed up—the humoralists made drunk—and the eclectics bewildered.

"It is surely not going too far to assert, that the manner in which we explained the origin and *mechanism*, if I may so speak, of various diseases, is of a nature to clear up, in no contemptible degree, the mysteries of pathology, of that science which cannot be said even yet to exist; for I set but little value on

the minute examination of the traces left by disease on our organs, though that pursuit has been pompously styled pathological anatomy."*

Hear that ye Carswells, Hodgkins, *et hoc genus omne*, and blush for the expenses to which you have put us, and the mazes of error into which you have led us!

"Like me, Gentlemen, you have no doubt been struck with the trifling good that study confers on society. But could it be otherwise when there is scarcely a sound idea on physiology abroad?"

Mark that, ye Blumenbachs, ye *Magendies*, (of *former* days), ye Mayos, and ye Elliotsons, who have written, translated, and commentated, till the presses have groaned under the weight of your tomes? Talk of animal magnetism after the following exploits.

"You saw me give rise, at *my pleasure*, to pneumonia, scurvy, *yellow fever*, typhoid fever &c., not to mention a number of other affections which, so to speak, I called into being before you."

M. Magendie can, of course, lay these spirits in the Red Sea, as easily as he called them from the vasty deep. He tells us, in the same lecture, that physicians can accurately note the phenomena of diseases at the bed-side, mark their phases and prognosticate their terminations.

"Very true; but do you imagine that the nurse, provided she be habituated to her calling, does not know all that quite as well as he." The BLOOD! The BLOOD! (as our friend Dr. Wilson would say), will, in future, make the grand distinctions between doctors and old women.

"All he (the physician) can do is to order certain remedies which, if necessary, the nurse could prescribe equally well."

Our highly gifted author illustrates this incapacity of medical practitioners by phthisis. "Eminent observers have described all its phenomena, even to the minutest details." Will this knowledge throw any light on its treatment, says he? Not a particle." But the BLOOD will enable us to accomplish miracles.

"*Perhaps* tuberculous matter may be detected in the blood, and, as a further step, the means of destroying it, or preventing its formation, ascertained. Hear a fact well suited to give confidence to our hopes. We know, in the first place, that tuberculous may be accurately distinguished from purulent matter under the microscope. Now, within the last few days, in examining the body of a woman who died of phthisis, I found among the pillars of the right ventricle of the heart certain bodies resembling a sort of fibrinous sac, and containing a fluid like the pus of a phlegmonous abscess. I carried the part home and satisfied myself, by microscopical examination, that the supposed pus was, in reality, tuberculous matter; it is clear, therefore, that it existed in the blood."

There's a discovery for you! Tubercles between the pillars of the right ventricle!! This fellow will be the death of us! Is it physically impossible that tuberculous matter could be taken into the blood from depots in the lungs?

Passing on to the second lecture of our ingenous confrere we come to a much more notable and important discovery than that of tuberculous matter in the ventricles of the heart. It is this—that blood-letting, so far from curing, is the direct cause of inflammation The announcement is so astounding that we must quote the passage entire.

"You are already acquainted with a great number of causes that modify the blood and induce disease; but you are scarcely, perhaps, prepared for the announcement, that by means of a therapeutical agent, holding the first rank amongst the fashionable remedies of the day, I produce the very same alterations in the blood, and, as their result, the *very same disorders* in the economy. This may,

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* Lancet, No. 787. p. 41.

perhaps, strike you as a random assertion, but my words are not lightly spoken. I have within my reach the guarantee of their veracity; experiment shall confirm them. I assert, then, loudly, and fear not to affirm it, that BLOOD-LETTING induces, both in the blood itself, and in our tissues, certain modifications and pathological phenomena, which resemble to a certain extent those we have seen developed in animals deprived of atmospheric oxygen, of drink and of solid food. You shall have the material proof of the fact. Here are three glasses containing blood drawn from a dog on three different occasions, at intervals of two days. The animal was in good health, and I took care to supply him abundantly with nourishment. In the first glass you see that the serum and clot are in just proportion to each other. The latter, which is perfectly coagulated, forms about four-fifths of the entire mass. This specimen of blood consequently appears to possess the desirable qualities. Now turn your attention to the second glass. The animal was still well fed when its contents were drawn, and yet you perceive an evident increase in the quantity of serum; the clot forms at the most only two-thirds of the whole. But here, in the produce of the third venesection, although the animal's diet remained unchanged, we find a still greater difference. Not only is the proportion of serum more considerable, but its colour is changed. It has acquired a reddish-yellow tinge, owing to the commencing solution of the globular substance."

See what an effulgent light is thrown on the most common matters by the fire of genius. Most people of common sense and common observation would have come to the conclusion, that if a dog, or even his master, were bled day after day, the crassamentum would decrease and the serum augment in proportion. This however is only the first step in the brilliant discovery. Let our readers pay attention to the next passage.

"I will *continue to bleed* this animal from time to time; but I can tell you beforehand, from the result of similar experiments, that the alteration in the properties of its blood will entail that of its organs, and finally death. The lung, for example, will become affected with *engorgement*, *œdema*, pneumonia, and the entire train of what people are pleased to call inflammatory phenomena; and mark the extraordinary fact, that this inflammation will have been produced by the very agent which is daily used to combat it."

Now it is more than thirty years ago that Dr. Kelly, Dr. Sanders, Dr. Seeds, and others, bled animals to death, and found that while the blood-vessels, tissues, &c. were blanched, certain vital organs, especially the brain, were gorged with blood, as though Nature had attracted the remains of the vital fluid to the great citadels of life. But who would have dreamt of putting down these engorgements, watery effusions, &c. as active *inflammations*—and still less of drawing the inference that bleeding would produce, instead of curing, inflammation! Every practitioner, on this side of the Channel at least, knows that if venesection be carried beyond the salutary point in pneumonia, effusion will take place into the air-cells of the lungs or cavities of the chest. But they also know that, unless bleeding be carried to this salutary point, effusion of blood will take place, and sudden and painful death will ensue. These hæmatophobic doctrines of M. Magendie, then, are fully as pernicious as the Brunonian system developed nearly half a century ago. These lectures, delivered with all the enthusiasm of a French genius, will have a precious influence on the English students there and in Germany! Magendie tells them, bleed in health, and inflammation will be produced—*argal*, bleed in inflammation, and the disease will be augmented! These tenents will be imbibed in the lecture-room—acted on in the bed-room—and the consequences will be, that these elèves will destroy their patients, and ruin their own professional prospects! Within these few days we saw an instance where pneumonia was suffered to rise to a point that baffled all remedies, by a young practitioner deterred from the lancet by the doctrines of Magendie. It is true that our ingenious author makes a kind of salvo, by telling his audi-

ence—"do not suppose, however, that I would recommend the practice of blood-letting to be *completely* discarded." Generous latitudinarian! But will this admission avail against the dog-destroying experiments constantly before the eyes of gaping elèves, incapable of discriminating between passive congestion from watery blood, and active inflammation from rich and sizy blood? Magendie has artfully thrown in pneumonia amongst œdema and engorgement of the lungs. We take the liberty of doubting that actual *pneumonia* ever results from venesection. But even if it did take place in the case of a *healthy* animal bled into *disease and death*, would any man out of Bedlam conclude that pneumonia would be increased by venesection?

In the second lecture M. Magendie broaches another crotchet, which he carries to a most ridiculous excess. From some experiments which he has performed he concludes that alkalies—carbonate of soda, or potash, for example, are highly injurious by *thinning* the blood and inducing inflammation! It is not long since a clever practitioner in one of our medical societies inveighed against the now general use of soda, as pernicious, on the authority of Magendie.

"Now we have often had occasion to observe, that an excess of alkalinity in the blood interferes notably with the freedom of its passage through the capillary vessels. When thus modified it penetrates their walls by imbibition, is extravasated into the surrounding tissues, and, among other effects, produces in the mucous membranes the disorders long known under the name of inflammation."

Thus, because M. Magendie rendered the blood of dogs so alkaline by injection into the veins—that is, so *watery and thin*, that it would *run through the sides of the capillary vessels, but not through their patulous mouths* (!!!) we are to prohibit soda and the alkalies in dropsical effusions and other complaints, taken into the stomach, and thus acting on the kidneys, and relieving the swellings! Was there ever such wild and non-practical doctrines emitted from professor's chair in this world before? And as to the very general use of soda and potass in the present day—why are they taken? For dyspeptic complaints, where acidities are notoriously predominant in the primæ viæ—where scrofulous enlargements of the glands prevail—and where uric acid appears in the urine. In these cases the alkalies are neutralized in the stomach and bowels, and so far from proving injurious, they are actually beneficial, even by their chemical qualities. These and other portions of the lectures under consideration prove most unequivocally that M. Magendie is a mere physiological experimenter, without any knowledge of practical medicine. He tells us that nurses are as good as physicians at the bed-side of sickness—and he tells us truly, as far as he himself is concerned. In fact, we had rather trust our bodies to an experienced nurse at any time, than to M. Magendie.

Lecture the Third.—While we censure freely what we consider to be practical errors in the lectures of M. Magendie, we shall never withhold our assent or approbation from those portions which we can conscientiously approve. In the opening of this lecture there is a doctrine propounded which every reader of this Journal will recognize as one which we have strenuously maintained for 25 years past—namely, that the changes of structure observed, *post mortem*, in fevers, are the consequences and not the causes of the disease.

"For an example of the error into which people fell in this way, let us take the fever called typhoid. In this disease the mesenteric glands are found considerably enlarged, the intestinal mucous membrane, and especially the follicles, ulcerated, besides many other disorders. Well, they ascribe the malady to these lesions, but they are wrong. These are the *consequences* of the disease, the *anatomical proofs* that it has existed, but they are not its STARTING POINT.

In this we agree with our author—in this opinion we have long anticipated him. But we do not altogether concur with him that—"with the present mode

of studying pathology that 'STARTING POINT, will never be discovered." The path which M. Magendie proposes, instead of our present mode of studying pathology, is by experiments on animals. Now, we unhesitatingly declare our solemn conviction that the present mode of observing symptoms during life, and recording the post-mortem phenomena is infinitely more likely to gain the starting-point, than that of torturing animals to death, either by food, physic, or the scalpel, and then observing the phenomena in the dead body. And here we will point out a fundamental error which vitiates every experiment that Magendie makes, and every inference that he draws. Let the practical reader reflect on the following sentiment, and ask himself whether its author has the remotest title to that of a careful clinical observer.

" For my part I declare loudly that I look upon these ideas about vitality, and the rest of it, as nothing more than a cloak for ignorance and laziness."

Thus all the phenomena observed in sickness and in health are to be explained by the laws of chemistry and mechanics! Let us just glance at some of the errors and absurdities into which this humoro-chemico-pathology will constantly lead its disciples. Dolorous mental impressions will, we know, change and derange the gastric juice, the chyme, the chyle, the bile, the urine, and, in short, every secretion that issues from every gland in the alimentary canal—and, as M. Magendie admits—will vitiate the blood itself. This will take place almost instantaneously when the individual is in good health, but crossed by grief or misfortune. Now if blood were drawn from such a person, and taken, to M. Magendie, like a bottle of urine to Dr. Laing, the chemical pathologist would pronouce the individual to be in a most desperate condition—most likely in the last stage of typhus. But, in a few days, the dolorous impressions clear away —digestion and assimilation become restored, and the blood assumes its normal condition. The blood then drawn and shewn to the professor would be pronounced the blood of a person in sound health. See then the monstrous absurdity into which the chemical pathology in exclusion of vitality, leads M. Magendie. According to his doctrine the vitiated state of the blood must have been the *cause* and not the *effect* of the mental emotions! This comes of throwing overboard the agency of the nervous system, or, in other words, of vitality, in the disorders of digestion and the vitiation of the fluids.

After ridiculing the theories which have been broached to account for the passage of the blood from the arterial to the venous capillaries by so slight a force as the heart and vessels exert, we are dazzled by the following effulgent explanation.

" My inquiries up to the present time, go to prove, that the passage of the blood from the arterial to the venous capillaries, is effected by means of the nice adaptation of its *physical properties to the physico-vital endowments of the vessels.*"

Most brilliant elucidation! The light which is here thrown on the subject is too bright for human eye to bear—and consequently we are just as much in the dark as ever.

If we can understand our lecturer, he conceives that the passage of the blood through the capillaries depends not on the liquid but coagulable fibrine contained in it; for if alkalies be injected into the veins of an animal, the coagulability of the fibrine is lost—the blood stagnates in the capillaries—and congestion, effusions, or even inflammation ensues. This, he affirms to be the case in most of the epidemics, and especially in the late one called the "*grippe.*" Without questioning these assertions or opinions, we will now extract a passage which will make every practical man stare.

" Again, *in acute rheumatism*, as I once before explained to you, the painful parts become the seat of engorgement due to the stoppage and accumulation of the blood in its canals. The liquid stagnates, *its temperature falls*, and hence the sensation *of cold felt by the patient, and which may, in some cases be felt by a bystander on the application of the hand.*"

Have we practised for forty years, and yet were so blind and unobservant as not to perceive that the joints in *acute rheumatism* felt cold, even to hands of byestanders! If the Seine is ever to be set on fire by mortal hand, M. Magendie will be the man.

M. Magendie has found or fancied (which is the same thing) that acetate of ammonia facilitates the passage of blood through the capillaries, and avers that he cures his rheumatic patients by this remedy alone. He says he has never lost a single patient in acute rheumatism, either in his hospital or in private practice—and we can well believe him—if they presented *cold joints* in this painful disease. The following sentence is praiseworthy—and it is more applicable than the author means it to be.

"All this is accurately true; nevertheless, did I assert it in too exclusive a manner, I should, in my turn, be guilty of an error. Nothing is so easy as to deceive oneself into the belief of the universal applicability of any important fact one may be fortunate enough to discover. Against such self-deception it is my duty to guard you."

We doubt if there is a single spot on the surface of civilized Europe, except Paris, where a medical audience would listen to the absurdities broached in Magendie's lectures, without bursting into laughter, or deserting the room.

We have already alluded to M. Magendie's crochets respecting soda, and its properties of causing inflammation, by making the blood so thin as to run through the sides of the arteries, but incapable of running through their patulous mouths into the venous capillaries. Listen, readers, to the proofs which he adduces of this important doctrine.

"My experiments have demonstrated the property possessed by this body of liquefying the blood, by combining with its fibrine. Now, I have not a doubt but that its long-continued medicinal use produces similar results on the blood, causes infiltration of the lungs, and acts, in short, so long as persisted in, as an inexhaustible source of pneumonia; at least, I am authorised in this belief by what occurred to a friend of mine, one of the most celebrated men of the present day. He has been compelled to give up taking the carbonate by a succession of pneumonic attacks, that followed each other while he was in the habit of employing it."

Thus, because a friend of M. Magendie's happened to have a series of pulmonic attacks, while using carbonate of soda, these attacks were the consequence of its use! And such reasoning is issued and swallowed in the year 1838! Alas for physic! No wonder that our profession is becoming the laughing-stock of the scientific and rational world, when animal magnetisers and hæmato-maniacs are listened to by men professing to have brains in their skulls!

Lecture 4.—This lecture commences with a kind of determination to throw overboard sensibility, contractility, and other vital phenomena in the circulation, and to adopt physics and hydraulics in their stead.

"There is a fact, in physics, remarkable for the excellent term of comparison which it serves to establish between the phenomena of the movement of the blood in our organs and the circulation of liquids in inert tubes. I allude to the enormous pressure which is required in order to make water pass through a tube of very small diameter, while the blood traverses with ease the infinitely more minute tubes that abound in our tissues. There must be some particular conditions to facilitate its passage. What proves their existence is, that if certain alterations are effected in the composition of the blood, it stops, undergoes morbid changes, becomes extravasated and decomposed, and produces the various disorders which pathologists have vainly attempted to explain by the words *inflammation and irritation. What sense, in truth, is there in applying the words inflammation to our organs? Do our tissues really take fire? I confess I know of no example of such a phenomenon.*"

Thus M. Magendie's assumptions that the capillary vessels have nothing to do with the capillary circulation, and that the passage of the blood through them depends entirely on certain qualities of the fluid itself, are perfectly gratuitous—and unsupported by facts or reasoning. Upon the principles of physics and hydraulics, how will he account for the crimson cheek, in shame, while no other part of the surface turns red? Has the heart power to direct more blood to the capillaries of the face than to any other capillaries? The idea is absurd. He tells us, in direct words, that the vessels do not possess contractility!

"The questions we have so far treated of belong, in great measure, whatever may be said to the contrary, to the subjects of physics and hydraulics. You will find that, in elucidating them, we shall have *no occasion to avail ourselves of the so-called contractility of the vessels, which, in reality, does not exist;* and we shall be quite as independent of the species of *sensibility*, termed *insensible*, and of the entire collection of absurd terms by the help of which no few romances, doubtless very clever, but very empty too, have been got up about the capillary circulation."

As to his objection to the term "INFLAMMATION," it is the most puerile effort at wit which we ever remember to have seen. Because the great toe of a man in gout does not flare up, like a gas lamp, the term "INFLAMMATION" is ridiculous!

Against "irritation" too, our author wages war to the knife.

"What on earth is the meaning of the word *irritation?* An obstacle of some sort or other modifies the course of the blood in any given organ, and instead of simply stating that there is a modification produced by a mechanical impediment to the progress of that fluid, you tell us the part is *irritated* and actually employ the very term the worst fitted to designate the disorder manifested in the circulation. How long, I should be glad to know, have our organs been proved susceptible of feeling passions—of becoming irritated—I had almost said of getting angry?"

The only comment we shall make on such exquisite absurdities shall be in the words of Magendie himself.

"The verbiage and subtlety of the bar seem to have spread to the members of our profession. Whoever talks loudest and longest usually triumphs, and, of course, *settles the matter his own way: he does so often in defiance of truth;* but what matters for that? he gets himself spoken of and makes a name. On the other hand, the man who does not possess that extraordinary gift of the tongue, by which white is made black and black white, remains unknown, vegetates, and passes for an ignoramus in the eyes of the public."

We should be inclined to laugh heartily at the new-fangled doctrines of the profession, did we not know that no doctrine or practice can be so preposterous or pernicious as not to entrap a considerable number of medical practitioners and especially of medical students. We must therefore endeavour to check the evils which M. Magendie's lectures are calculated to disseminate through society. What will the *practitioner* say to the following passage?

"We were speaking of the viscidity requisite for the circulation of the blood through our organs. Now here is the blood of an individual who had an attack of hemoptysis, and was bled freely for it. You know well what I think of that remedy,—worse perhaps, than the disease. Be that as it will, you may perceive that this blood is very slightly viscous; I, in consequence presume that further mischief will occur."

Heaven help the unfortunate hæmoptisical patients who may come under the care of this visionary enthusiast, whom experience (if he really has any,) must have blinded rather than enlightened! We are almost weary of exposing the matchless absurdities that crowd every page of these lectures; yet still we must proceed a little farther. Who, out of Bedlam, would compare the effects resulting from injections into the veins with ingurgitation into the stomach?

None but Magendie. He injects mucilage of gum-arabic into the veins of an animal till the vessels are choaked up and the animal dies, and he does not appear to think that there is the slightest difference between this process and that of taking gum-arabic into the stomach, where it has to undergo *digestion* and assimilation before it enters the circulation!!

"You remember the experiments we made to exemplify this question. We added a viscid matter, innocuous in itself—gum, for example,—to some water, and after colouring the fluid, injected it into the jugular vein of an animal. So long as the injection traversed the large venous trunks no disorder was occasioned; but once it had arrived through the pulmonary artery, amongst the minute ramusculi of the lung, its degree of viscidity ceased to be in just proportion to the capacity of the tubes. The consequence was, that the circulation almost instantly stopped, and, as the encephalon no longer received the necessary excitement of arterial blood, its functions ceased, and the animal quickly perished. The autopsy was immediately made, and, on incising the pulmonary parenchyma perpendicularly to the direction of its principal vessels, we invariably found them stuffed with the substance injected. Let us admit, however, that this liquid had succeeded in making its way through the capillary system of the lung. You are aware that the diameter of the ultimate tube varies almost in every organ, and that in some of them it is still smaller than in the lungs. Let us suppose, then, any substance that has passed through the pulmonary parenchyma with great difficulty, arriving at other capillaries of greater tenuity. It will, beyond question, be arrested in its course by this new obstacle; and its stagnation and subsequent effusion will produce, according to the nature of the parts with which it is in contact, various disorders, more or less analogous to those already described."

Lecture V. In this lecture, after slaying, for the tenth time, the doctrines of vitality, irritability, &c. our Professor rises into the miraculous, and assumes the attributes of a modern Prometheus.

"But, Gentlemen, it has been shown to *demonstration*, that the empire of inflammation is even more widely extended than it was the habit to assume; and, what is remarkable, *it is I who, like a generous enemy, have conferred on it powers of which even its very warmest partisans had deprived it. They* limited its action to living organs; *I* have extended it to the tissues when they have ceased to live. Many and many a time have I proved, by experiment, that its most terrible symptoms develop themselves in parts *wholly inanimate.*"

The animal magnetisers may now hide their *diminished* heads—if they have any heads left—and the Okeys may go back to their old occupations in the garret.

No man can, with more adroitness than M. Magendie, dilute a small quantum of truth with a large mixture of misrepresentation, when an opponent is to be turned into ridicule. Yet no process is more dangerous, or more dishonorable. Thus, after giving a short, and by no means graphic sketch of a chlorotic girl, M. Magendie observes—"in order to remedy these *organic disorders* (what a phrase!) the practitioner *bleeds* the patient, and gives preparations of iron." Now if the professor were closely questioned as to the practice of *bleeding* in chlorosis—*merely as chlorosis*—he would probably reply that he knew not whether such was the practice—nor did he care. His object was to produce a "sensation" amongst his elèves, no matter at what expense of his professional brethren!

The beautiful and accurate deductions of Laennec and all our modern auscultators are thrown overboard, and from some squirting experiments in leathern and metallic tubes, M. Magendie boldly avers that the "bruit de soufflet," "bruit de scie," "bruit de diable," &c. have nothing to do with affections of the heart itself, but merely with the composition of the blood! With a man

who outrages reason—denies facts—and maintains factions—it is useless to argue.

We shall not, therefore, pursue these lectures any further *at present*. We have pointed out sufficient samples of their unparalleled absurdity—their shameless illiberality—their unsparing criminations of the profession at large—and, worse than all, their most pernicious tendency. Let the medical students, and the junior practitioners beware how they embrace M. Magendie's tenets, or act on his principle. If they do not, they will sacrifice their own reputations—and, what is of more consequence, the lives of their patients.

An Introductory Discourse on the Studies required for the Medical Profession. Addressed to the Students of the Medical School of St. George's Hospital, October 1, 1838. By Sir Benjamin C. Brodie, Bart. F.R.S. Serjeant-Surgeon to the Queen, and Surgeon to Saint George's Hospital.

This Discourse was delivered in the School of the Hospital, to a crowded audience, at the commencement of the present session. Sir Benjamin Brodie has not only attained the highest place amongst existing British Surgeons, but he has fully deserved it. His early diligence has been equalled by his subsequent industry, and the acuteness of observation and soundness of judgment, which form the characteristics of his mind, have struck all who have perused his writings, or enjoyed the honour of his acquaintance. A discourse on medical study, from him, must command attention and respect. The old may compare his experience with their own—the young may learn the road to success from one who has himself trod it.

We shall extract such passages from this Address, as are calculated to be useful. They are far from few. Sir Benjamin is essentially a practical man, and his strong sense detects and exposes the fallacies and sophisms of the day.

1. Speaking of the *Treatment* of Disease, Sir Benjamin observes :—

"Let it always be borne in mind that this last is the real object which you have in view. I address you as future medical practitioners. If, taking another course, you choose to study anatomy and physiology, merely as interesting branches of human knowledge, you are at liberty to do so, and you will be as well rewarded for your labours as if you had applied yourselves to geology, optics, or astronomy. In like manner, if any one apply himself, as a philosopher, altogether to the study of pathology, he will find much in it that may interest himself, and that may be useful afterwards to those who carry their researches further. But as medical practitioners, you must not stop at either one or the other of these points; and, never losing sight of the ultimate object of all your investigations, you must estimate the value of whatever other knowledge you acquire by the degree in which you find it to be directly or indirectly applicable to the healing art.

It is one advantage arising from the peculiar constitution of the London medical schools, that, with few exceptions, the instructions, which you here receive, have, in a greater or less degree, a tendency to practice. The ambition of the teacher of anatomy is not limited to success in his present vocation. He looks forward to the time when his profession as a physician or surgeon will elevate him to fame and fortune. His mind is naturally directed to those inquiries, a proficiency in which will most assist him in the attainment of these objects; and that which is useful to himself cannot fail to be useful to his pupils. I have no doubt that the praises which are bestowed on some of the continental anatomists are well founded: that there are universities in which the anatomical professors, devoting their whole time, and industry, and intellect, to this one

pursuit, explain the mysteries of minute anatomy at greater length, and with more precision, than the teachers here: but, nevertheless, I assert that ours is the better method with a view to the education of those who wish to become, not mere philosophers, but skilful and useful practitioners.

In like manner, pathology is not taught here as a separate science, but you receive your instructions in it from the lecturers on the practice of physic and surgery; who, while they explain the changes of function or structure, which constitute disease, point out also the symptoms by which the existence of these changes is indicated in the living body, and the means to be employed for the patients' relief. Thus, while you are taught pathology, you are taught also its uses and application; and these different subjects, brought under your view at the same time, serve mutually to elucidate each other; for, while pathology assists you in obtaining a knowledge of symptoms, the study of symptoms, and of the operation of remedies, contributes in no small degree to extend your knowledge of pathology."

There is much in these remarks that call for serious consideration. Medicine is partly made up of abstract, partly of practical science. As philosophers, we may cultivate the former—as physicians and surgeons we must apply, and should be familiar with, the latter. The mass of students are neither calculated nor intended for mere speculative men. They require that practical knowledge, without which they can neither feel nor inspire confidence, and which is indispensable for the safety of their patients, and the success of themselves.

But latterly a disposition has been shewn in some of the London schools, to erect separate chairs of physiology and pathology, and to teach them in their transcendental form—a plan which will probably be attended with ultimate mischief to the pupils, and transform them into theorists, instead of plain and sensible practitioners.

2. It would be well if students would take this hint:—

"It is of great importance that you should so arrange your studies that no excessive and overpowering demand may be made on your attention at any one period. And here let me advise you to begin with a system of steady application, and to adhere to it throughout. It is not uncommon for medical students, any more than it is for other students, to engage at first with zeal in their pursuits: then, as these lose the charm of novelty, to become careless and indifferent, and, at last, when their education is drawing to a close, and it becomes a question how far they are qualified to undergo the required examinations, to endeavour to make up for the time that has been mis-spent and wasted by excessive labour, such as is incompatible with sufficient physical repose and mental relaxation. But it is not in this way that great things are to be accomplished either in our profession, or in any other. Habits of attention which are once lost are not easily regained; and no durable impressions are made upon a mind which is exercised beyond its powers."

3. Sir B. Brodie recommends devotion of the first season to anatomy. If the student has five or six years before him, he should dedicate two Winters to this department of science, before he attends the hospital.

"While engaged in attendance on the hospital, always bear in mind that there is no one of your other studies which, as to real importance, can compete with this. The lectures on anatomy, chemistry, materia medica, practice of medicine and surgery, and midwifery, are nothing in themselves. They are but the means to an end, and are valuable only because without them you would be unable to learn the symptoms and treatment of diseases in the hospital. I feel it my duty to make this observation, and to make it earnestly, because it appears to me that the truth which it inculcates is not, for the most part, sufficiently impressed on the minds of medical students. Perhaps, however, if strict justice were done to all concerned, and we were to trace this mistake to its origin, we should find that it belongs, not so much to the medical students themselves, as

to those by whom their course of education is regulated, and who, by a false estimate of the importance of lectures, and an unnecessary multiplication of the number of them which the students are required to attend, have left an altogether insufficient time for a profitable attendance on the hospital."

Probably the Apothecaries' Company require attendance on too many lectures upon Botany, and certainly on too many upon Medical Jurisprudence. In other respects, it would not be easy to find much fault with their arrangements. The fruits of their plans may be seen in the superior intelligence of the present over the former race of professional men. We allude, of course, to the mass. The character of Ollapod in Tristram Shandy would fit few now.

4. *Hospital Attendance.*—All that Sir Benjamin says upon this subject is excellent.

"It is not by going through the form of walking round the wards daily with the physician and surgeon that you will be enabled to avail yourselves of the opportunities of obtaining knowledge which the hospital affords. You should investigate cases for yourselves; you should converse on them with each other; you should take written notes of them in the morning, which you may transcribe in the evening; and in doing so you should make even what are regarded as the more trifling cases the subject of reflection. Some individuals are more and others are less endowed by nature with the power of reflection; but there are none in whom this faculty may not be improved by exercise, and whoever neglects it is unfited for the Medical profession.

You will at once be sensible of the great advantage arising from your written notes of cases. But that advantage is not limited to the period of your education. Hereafter, when these faithful records of your experience have accumulated, you will find them to be an important help in your practice; when years have rolled over you, and the multitude of intervening events have obscured the once bright inscriptions on your memory.

Feeling as I do how essential it is, both to yourselves and to the public, that your hospital studies should be well conducted, I shall proceed to offer some further observations on this subject.

In the first instance, your attention should be directed more to the symptoms and progress of diseases than to their treatment. You should begin with those of the simplest form, as the only means of obtaining that elementary knowledge, without which you will in vain endeavor to comprehend the more complicated and difficult cases. Carrying with you into the wards of the hospital the knowledge which you have acquired in the dissecting room, you will in each individual case, make these inquiries:—What is the nature of the disease, considering it anatomically and physiologically, and in what organ is it situated, or has it no distinct locality? If these points can be satisfactorily determined, you will, in most instances at least, have discovered the bond of connexion between the various symptoms; your subsequent investigation of the case will be rendered more simple; and you will be enabled to form a more distinct and rational notion as to the treatment which is required, and the probability of a cure, than you could have formed otherwise. Do not be satisfied with having learned the structure and functions of the body in health, but attend the examination of those who have died of their complaints; and endeavour to associate the symptoms which existed before death with the morbid appearances observed afterwards. The more extended cultivation of morbid anatomy is one of the most peculiar features of modern times. It has laid the foundation of a more accurate system of pathology than that which existed formerly, and has led to many improvements in practice; and it is right that your minds should be impressed with a just sense of its great value and importance."

5. *Morbid Anatomy not Pathology.*—Sir Benjamin makes some admirable remarks upon this head.

"Morbid anatomy is not pathology, though it is an essential part of it. You

may know all that is to be known of the former, and yet your knowledge of the latter may be very limited. To be a pathologist you must study disease in the living body, even more than in the dead. Even in the instance of what we call local diseases, morbid anatomy does not teach us all that we ought to know; but there are many diseases which, as far as we can see, have no absolute locality; and what does it teach us there? In cases of hysteria, gout, fever, and in a number of others which it would be easy to enumerate, the dissection of the dead body furnishes us with little else than negative information; and in some cases, if we trust implicitly to it, morbid anatomy will prove a deceitful guide. Thus, in a patient who has died of continued fever, you find the mucous membrane and glands of the lower portion of the small intestine ulcerated. Your first impression might be that you had discovered the original malady of which the fever was symptomatic. It is only by the investigation of the disease in the living person that you are enabled to satisfy yourselves that the ulcers were the consequence, and not the cause, of the fever. The mere morbid anatomist may suppose that in the inflammation of the œsophagus and trachea, he has discovered the essence and real seat of hydrophobia; but a more extended observation teaches you that such inflammation is but a contingency; and that, whether it exist in a greater or less degree, there will be the same fatal termination of the patient's sufferings. Then there is an extensive class of diseases in which we may say that there is actually no danger; and of these morbid anatomy can teach us nothing, although we may learn much respecting them, so as to understand their nature sufficiently well, by investigating them in other ways. We know as much of a sick headache as of pulmonary consumption; as much of psoriasis and lepra, as of small-pox and measles."

6. *A Sanguine Temperament the best.*—"The first question, then, which should present itself to you in the management of a particular case is this:—Is the disease one of which the patient may recover, or is it not? There are, indeed, too many cases in which the patient's condition is so manifestly hopeless, that it is impossible for you to overlook it. Let me, however, caution you that you do not, in any instance, arrive too hastily at this conclusion. Our knowledge is not so absolute and certain as to prevent even well-informed persons being occasionally mistaken on this point. This is true, especially with respect to the affections of internal organs. Individuals have been restored to health who were supposed to be dying of disease of the lungs or mesenteric glands. But it is also true, though to a less extent, with respect to diseases of parts which are situated externally. I know females who are now alive and well, who were supposed to labor under malignant disease of the uterus; and I could mention many cases in which patients have recovered of what had been regarded as an incurable disease of a joint. It is a good rule in the practice of our art, as in the common affairs of life, for us to look on the favourable side of the question, as far as we can, consistently with reason, do so. A sanguine mind, tempered by a good judgment, is the best for a medical practitioner. Those who from physical causes or habit are of a desponding character, will sometimes abandon a patient to a speedy death, whom another would have preserved altogether or for a considerable time."

Sir Benjamin's observations on the principles which should guide us in the treatment of disease are both philosophical and practical. We wish that our space permitted their insertion. But we cannot refrain from quoting the following observations:—

"So far the rules of practice seem to be sufficiently intelligible. But the great difficulty remains to be noticed:—How are you to determine what are remedies, and what are not, and the real value of the remedies which you possess? Here is the most abundant source of the errors which infest our art; from which even the most experienced and discerning practitioners are not altogether exempt; but which especially prevail among those who are deficient in

experience or good sense. It is to the almost entire igorance of the public, and especially of the aristocratic classes, as to the evidence which is necessary to establish the efficacy or inefficacy of a particular mode of treatment, that we are to attribute the reputation which is frequently obtained by empirics and other adventurers, who pretend to practise the art, without having learned the science, of medicine.

When the optician, in constructing an optical instrument, arranges his lenses and flectors in a new order, his knowledge of the principles of optics enables him to predict the effect which will be produced, so that, except as to some minor circumstances, he can be scarcely said to be making an experiment. But there is no reason to believe that in the study of those varied and complicated phænomena, which are the subject of physiology and pathology. we shall ever arrive at that point which has been long since attained in Optics, and some other branches of natural philosophy ; and at all events, we are far distant from it at the present moment. Few greater benefits have been conferred on mankind than that, for which we are indebted to Ambrose Parey—the application of a ligature to a bleeding artery : but no knowledge which he possessed would have enabled him to say more than that it would be probably succesful ; and it was left for after-ages to demonstrate the principle on which it acts, and to explain the circumstances which may cause its failure. John Hunter, as you will hereafter learn, was led by his knowledge of the animal economy to propose a new method of treating aneurysm ; and it is impossible to estimate the number of lives which have been preserved by this discovery ; yet it was but an experiment, of which even his philosophic mind could not, with certainty, predict the result. It must, however, be admitted that science pointed out the road to these inventions. But this cannot be said of the great majority of the remedies which you will see employed. Nothing that could be known beforehand would lead you to expect that Ipecacuanha would operate as an emetic ; or that Opium would occasion sleep : that Quinin or Arsenic would cure the ague ; that Inflammation of the Iris would yield to mercury : or the gout to colchicum. The invention of these, and of a multitude of other remedies, is of accidental origin ; we are indebted for our knowledge of them, for the most part, to the observations of ignorant persons, accumulated during a long series of ages ; and the office of men of science is little else than to study their effects minutely, and to learn the right application of them. But even in doing this, the greatest caution, and I may say, scepticism is necessary to prevent you being continually guilty of mistakes. I have already told you how many diseases, if left to themselves, admit of a spontaneous cure. We see the surface of the body, and we know by certain outward signs a good deal of what takes place within ; but there is much of which we know nothing, so that it is impossible for us to take cognizance of all the circumstances which may occur to modify the course, and alter the termination of a disease. If we trust implicitly to the instinct which inclines us to believe that when one event follows another, the first is the cause, and the second the effect, we shall be frequently directed wrong. The fact of a patient having recovered under a particular mode of treatment, goes but a little way towards establishing its value ; nor is anything sufficient for this purpose, short of the same result being obtained in many similar cases, in which there was otherwise little prospect of recovery. It is the diposition of every one of us to admit the efficacy of the remedies which we employ on insufficient evidence ; and unless we, whose duty it is to understand these subjects, are on our guard against this not unnatural prejudice, we have little right to blame the creduilty of those whose minds are not turned to these inquiries, when a corresponding error of judgment leads them to believe in the absurdities of metallic tractors, animal magnetism, and homœopathy ?"

Sir Benjamin Brodie concludes with some observations which the experience of most men confirms :—

"Although many years have since elapsed, it seems to me but as yesterday when I was, as you are now, a young adventurer in this great metropolis; and I well remember how often, in the intervals of my occupations I have contemplated with something like dismay, the prospect which lay before me. My own feelings, at that time, explain to me what may possibly be yours at the present period. Yet you have undertaken nothing which energy and perseverance, and upright and honorable conduct, will not enable you to accomplish. It cannot, indeed, be predicated of any individual to what exact extent he may attain professional success, for that must depend partly on his physical powers, partly on the situation in which he is placed, and on other contingencies: but having had no small experience in the history of those who have been medical students, I venture to assert that no one who uses the means proper for the purpose, will fail to succeed sufficiently to gratify a reasonable ambition. You have entered on pursuits of the highest interest, in which you will have the no small satisfaction of knowing that you never acquire any real advantage for yourselves which is not the consequence of your having benefited others. It is true that you have years of constant exertion before you; but you will eventually learn how preferable such a situation is to that of those individuals who, born to what are called the advantages of fortune, but neglecting the duties of their station, believe that they can direct their minds to no more worthy object than the multiplication of their selfish enjoyments. It will not be your lot, as it is often theirs, to suffer the miseries of ennui, or to be satiated and disappointed with life at an early period; nor will you have to regret, as you advance in age, that you have lived unprofitable members of society."

The lecture will be read with as much pleasure and as much instruction, as were experienced by those who heard it. The good sense and good feeling of its author are exhibted in every page; and the student who lays some of its lessons to heart, will never repent his perusal of it.

A CLINICAL LECTURE OF THE PRIMARY TREATMENT OF INJURIES, DELIVERED AT THE NEW YORK HOSPITAL, NOV.22, 1837. BY ALEXANDER H. STEVENS, M.D.

This is a well conceived and well-written lecture. It takes up the supject of "shock" or "constitutional irritation after injuries," examines it methodically, and dwells on the treatment of the particular symptoms or phenomena which characterise it.

There is a question which has long been agitated and is not yet satisfactorily settled. Should a person laboring under the shock of an injury be bled? The arguments for bleeding are thus stated by Boyer in his chapter on Injuries of the Head.

"What we have chiefly to fear after a violent percussion of the heard are, sanguineous congestion, rupture of vessels, extravasation of blood and inflammation. The most powerful means of preventing these consequences is to diminish the quantity of blood by bleeding. At the moment, therefore, when we are called to a person who has fallen or received a blow upon his head, and who has symtoms of concussion; we should bleed largely from the arm, and repeat the operation several times within twenty-four hours. If the symptoms are not relieved, a vein in the foot, even the juglar vein should be opened. At the same time leeches should be applied to the temples. It is impossible to say how much blood should be taken away in such a cese. Few cases require so large and repeated bleedings as injuries of the head. Experience has shown that bleeding is the most efficacious remedy that can be employed, and the writings of the best observers abound with cases illustrating its advantages. All writers

are not however agreed as to the propriety of bleeding in the cases in question. Some looking only to the loss of the elasticity of the brain, and the stupor resulting from it, consider bleeding injurious, and perfer the use of remedies calculated to relieve the brain from its torpid state. But experience has shown that when the injury has not been severe enough to destroy entirely the functions of the brain, and to cause sudden death, there is no further danger except from extravasation of blood, inflammation and suppuration. Now bleeding is the best remedy to prevent these consequences. The number of bleedings, the quantity to be drawn, and the part from which it is to be taken must be determined by the ability of the patient to bear them, his strength and temperament.

In the same chapter, Boyer says, emetics are sometimes useful but generally dangerous remedies. He advises purgatives, 'warm drinks, even cordials when the stupor continues and the weakness is very great.'

'The difficulty of treating these cases properly, arises from the uncertainty of the diagnosis. In simple stupor of the brain, exciting remedies are indicated; in extravasation they are injurious. The indications are clear when the nature of the case can be ascertained—the obscurity is in the symptoms by which the condition of the brain is manifested.'—*Boyer* Traité des Maladies Chirurgicales. Vol. 4th."

In the first place we may remark that these observations of Boyer's apply to injuries of the head. They do not refer to cases of shock in general. What weight they may have must therefore be materially diminished in the case of simple shock.

Dr. Stevens remarks :—

"I have seen many recoveries from a state of extreme porstration where either nothing was done except leaving the patient quiet, or where rest was combined with stimulating remedies; and having carefully compared the result of this treatment with that of an opposite character, I confidently recommend it to you in all cases of injury attended with great porstration, except internal hemorrhages; as in the head from apoplexy or injury, and in any of the cavities of the chest or abdomen from wounds. In these cases it is better to incur the dangers of extreme depression of the powers of life, while a clot is forming at the mouths of the bleeding vessels, than to re-excite the bleeding by giving force to the action of the heart and arteries. These remarks are especially applicable to gun-shot wounds of the lungs."

It appears to us that nothing can be more absurd than to bleed a man furiously again and again, merely because he has been knocked down or run over. Yet in a case of severe shock, particularly in injuries of the head, the consequent reaction is so likely to be severe, that a moderate abstraction of blood is not objectionable in theory, nor, we think, in practice. We say a moderate abstraction of blood, for we do consider that recommended by Boyer, decidedly immoderate.

In a slight case of concussion we have always found the do-nothing system answer very well. Quiet, cold lotions to the head, and purgatives, have answered very well in most cases. But in severe concussion, if the symptoms do not yield, those of compression or inflammatory action must be apprehended, and depletion ought to be resorted to.

Dr. Stevens notices particular symptoms. We shall insert his observations on a few.

Jactitation.—This occurs in various degrees as a symptom of fever of two forms: *First*, the fever with strong, full pulse, moderately accelerated. *Second* with a very rapid thrilling pulse, easily compressed. Bleeding is applicable to the former state; the latter demands the application of cold to the head, tepid ablutions to the extremities, opium and extreme quiet of mind and body. But the sort of jactitation more immediately under consideration, occurs in connexion with coldness of the surface, a lustreless eye, and disturbed sensorium; this is a common effect of hemorrhage. Warm stimulants, external heat, sinap-

isms to the epigastrium, together with mechanical confinement in a draft of cool air, and frequent sponging of the face with cold water, are here indicated. When the skin has become hot, sponging with cold water, or spirits and water, or ice to the head is also useful. In many instances, confinement by bandages, pressure upon the knees so as to keep the legs extended, and at rest, will induce sleep; even the weight of a pillow in slight cases is attended with benefit. Of the internal remedies more particularly indicated by this symptom, opium and camphor stand in the foremost rank.

Vomiting in the Intemperate.—"Sometimes vomiting or retching occurs *in those habituated to spirituous liquors*, from withholding the accustomed stimulus: here the customary dram is required. In all cases where it contiunes after the stomach is emptied, it should be met by sinapisms to the epigastrium, or to the whole abdomen, applied hot, and not so strong as not to be tolerated for two or three hours. If the surgeon be not attentive and rigid in the enforcement of the proper administration of remedies, vomiting will be reinduced by an undue quantity of stimulants, or of the vehicles in which they are administered. On this point it is difficult to fix upon doses and quantities that will not require great variation in particular cases. Yet as a medium dose that can be administered in any case, I would state about two quarts in twenty-four hours; and of brandy half a pint; carbonate of ammonia one dram; the vehicle two quarts. As regards the intervals of exhibiting these remedies, once in fifteen minutes is sufficiently often for the worst period, and the quantity half an ounce. After the patient has rallied, he will be more benefited by giving larger quantities at longer intervals, and permitting him to sleep. Alternations of nourishment and sleep, are Nature's best restoratives. If you have a very careful and intelligent assistant at the bedside, the patient may be suffered to sleep until the pulse begins to flag; but after injuries, as in low fevers, patients may sleep away their strength, and relapse into coma and prostration, for want of due stimulation. The timidity of nurses not unfrequently leaves patients to sink for want of stimulus, when in fact they are able to swallow. The surgeon placing himself at the patient's right side, should gently elevate his head with the left hand, and rubbing the half-filled spoon against the lower lip of the patient, endeavour to arouse him by a decided exhortation to swallow; and at the first indication of consciousness he should pour the liquid on the back part of the tongue, and wait a few moments to see if it is swallowed, which he will know by seeing the larynx to be slightly elevated. If this does not take place, these efforts should be repeated, and the patient be again exhorted to swallow. If the attempt does not succeed, the liquid should be permitted to run out of the mouth, otherwise it may produce strangulation."

Stimulants ought not generally to be given long after a rigor has set in.—When a person, says Dr. Stevens, has been travelling with the thermometer at zero, and approaches the bar-room fire, he shakes and trembles, and feels cold, although he may have been comfortable on the road. The rigor is the harbinger of returning warmth. If he sits by a hot fire and takes stimulants, brandy in lieu of warm tea, a feverish condition of the system is induced. It is in this way that colds are taken. Therefore, we should be careful, lest the operation of the stimulants be carried into the state of excitement, and cause undue rapidity of circulation, and undue determinations of blood to particular organs. The serous tissues of the head, the mucous membranes of the alimentary canal, and of the lungs, are most often the seat of such local determinations.

Another bad effect of giving too much stimulus is, that vomiting is excited. "Ah, Doctor," said a shrewd bye-stander, when a medical man attempted to bleed, and the blood would not flow, "nature knows more than the physician." So she does, also, when she rejects by vomiting, the excessive doses to which the stomach is often subjected.

A third evil consequence of excessive stimulation is, that it exhausts the ex-

citability and leaves the patient in a state of depression very difficult to manage. To stop with the stimulants is difficult; to go on with them impossible. The giving of powerful stimulants is like borrowing money at high interest; it may do in a special emergency, but if long continued, it is sure to be followed by loss of excitability, which is the capital by which life is supported.

This lecture contains many excellent observations.

NEW YORK HOSPITAL.

LECTURES ON LITHOTOMY, DELIVERED AT THE NEW YORK HOSPITAL, December, 1837. By ALEX. H. STEVENS, M.D. Surgeon of the New York Hospital, and Emeritus Professor of Clinical Surgery. 8vo. Stitched, pp. 93. New York, 1838.

We shall extract a few passages from this Lecture. Dr. Stevens appears to be a zealous and an able surgeon.

1. *On the Causes of Death from Lithotomy.*

After quoting the observation of Dupuytren, that "about three-fifths die of inflammation; the most frequent seat of which is the bladder, the cellular tissue of the pelvis, the rectum, the peritonæum, the kidneys, the lungs, the pleura, or the liver."

"About one fourth die of hemorrhage, or the means used to arrest it; of the rest some perish from accidental or concomitant diseases: as verminous affections, measles, convulsions, small-pox, disorders of the digestive system, rheumatism, catarrhs, &c."—Dr. Stevens adds:—

"Without sufficient personal experience to offer an opinion on these most interesting and important statistical statements, I would yet remark that too little stress appears to me to be laid upon those complications of affections of the kidneys, which are found upon dissection to co-exist with stone in the bladder, and render operations improper and fatal; and secondly, that no mention is made of those nervous symptoms, the sinking and prostration from which it is not unusual for patients to perish; and finally, nothing is said of phlebitis, or of diffuse inflammation, depending either upon infection, or a disordered state of the constitution."

We quite agree with Dr. Stevens in the preceding observations. We are sure that the state of the kidneys is insufficiently ascertained or weighed, previously to the performance of the operation of lithotomy.

Dr. Stevens goes on to remark that, in post-mortem examinations we find, according to Dupuytren, the neck of the bladder, and the left half of the prostate gland, freely and smoothly divided by the cutting instrument as far as the cellular tissue which surrounds the bas fond, and the lateral portions of the bladder; and we see inflammation of this tissue spreading to all the soft parts within the pelvis, the rectum, and the peritonæum. In other cases the neck of the bladder and the left half of the prostate are found scarcely divided by the incision, but exhibiting a wound of which the lips are contused, torn, stretched, and the surface soft and gangrenous. In this case, also, the inflammation extends into the pelvis, to the rectum, and to the peritonæum; but from different causes.

The *bladder itself may become inflamed* by being pinched, stretched, bruised, or lacerated with the forceps. This instrument, passed between the bladder and rectum, may seize the stone between the coats of the bladder; or the posterior wall alone of the bladder may be embraced by the instrument.

The cellular tissue of the *rectum may become inflamed* from the violence done to it; or its mucous membrane may be inflamed by the contact of urine arising from an opening through the gut.

Estimate of the principal Instruments employed.—Speaking of the various instruments in common use, Dr. Stevens observes:—

"In the lateral operation, the preference of one or other of these instruments is more or less a matter of taste, about which no one should dispute But as regards the bistouri caché of Frière Côme, I consider it a dangerous instrument; liable to wound the fundus of the bladder, and by no means necessarily making, in the withdrawal of it, the definite incision claimed as one of its advantages. The incision must be larger or smaller, not only according to the graduation of the instrument, but according as it is withdrawn straight, or pushed to one side or the other; or as its handle is elevated or depressed. The knife of Langenbeck, and the straight staff of Mr. Key, appear to me very awkward instruments: after one trial of each of them, I fully resolved not to employ either of them again. The blunt bistoury seems to me a very convenient instrument; but considering that the incision of the prostate is to be made with one sweep of the knife, it must happen that this incision is more or less extensive than the operator may desire, according as that gland is harder or softer, or larger or smaller. The desideratum is to make a decision of a definite extent; this object is not precisely attained by the bistoury."

Dr. Stevens refers to the observations of Mr. Stanley on the subject. They are like all the remarks of that gentleman, judicious.

An exclusive preference is not to be given to the gorget, or to the knife for the incision of the prostate. With either instrument, skilfully used, the operation may be well done. With a gorget, properly constructed, there is no risk of wounding the internal pudic artery or the rectum, because the limits of the incision are determined by the dimension and form of the instrument. With a knife in an experienced hand, there is not so much certainty of confining the incision within its proper limits.

A comparison of the gorget with the knife, so far as instituted, is favourable to the former; but to the narrow-bladed and beaked knife, first used by Mr. Blizard, an advantage belongs, which a gorget, from the width of its blade, cannot possess. The knife enters the bladder, as Mr. Blizard was accustomed to remark, as easily as a probe. The gorget, on the other hand, must meet resistance in passing through the prostate; very much less, however, will this resistance be, than it has usually been represented, when the gorget has been properly made, and it is guided with skill.

For the young subject, or for a thin adult, the knife is especially suited. It is also to be preferred for any case in which the bladder is closely contracted upon the stone. But for a very fat, or for an old subject, in whom, by the enlargement of the prostate, or the dilatation of the rectum, the bladder is raised much above its natural situation, the gorget is better adapted, on acccount of the great distance from the perineum, at which the prostate and neck of the bladder are in such instance situated.

We must say that we think a good gorget not so bad an instrument as it is now generally represented to be. One great advantage attending it, is the obliquity of its handle, in reference to its blade. When the scalpel is introduced into the groove of the staff, a clumsy manœuvre is requisite to accommodate the operator's hand to the subsequent stage of the incision.

Best Method of Performing the Operation.—Dr. Stevens revives, but he believes, improves the Celsian operation. The form of incision is much the same as that of the "cutting on the gripe," but it is the staff, not the gripe that he cuts on.

He offers to the profession a new instrument for the bi-lateral section of the prostate; in form it resembles a large olive, with a beak at the extremity, with cutting edges at the sides, parallel to its longest axis, and with a straight handle. The instrument, of which there are three sizes, and the manner of employing it, will be readily understood by the annexed engravings. The grooved staff employed in connexion with this instrument, is as wide as the urethra will

admit, and the groove gradually terminates as it approaches the end of the staff.

The advantages in the use of this instrument are, first, that the circular form of a transverse section, gives an opening through the gland of three diameters instead of two, as when a flat instrument is employed; thus it is not necessary to carry the incision so far laterally to obtain an opening of given dimensions; and hence there is less likelihood of hemorrhage from injuring the plexus of vessels that surrounds the prostate.

Second. The prostate is cut horizontally, and though not absolutely, yet for all practical purposes in its greatest diameter.

Third. The rectum is pushed back by the convexity of the posterior part of the instrument.

Fourth. As the prostate is stretched transversely across the instrument, the section is made by a clean cut, and with so little resistance that the instrument does not, like ordinary gorgets, require to be thrust in with force, but may be passed lightly along until the section is completed. Thus there is less danger of wounding the fundus of the bladder by a sudden cessation of resistance from the parts divided; they are, in fact, divided without force.

Fifth. The easy division of the prostate obviates the danger of tearing the cellular tissue which connects the anterior surface of the bladder to the posterior wall of the ossa pubis.

Mode of Operating.—"The following is the method I have adopted, and the one I would recommend for performing the operation.

Let the patient be secured in the usual manner, but with the pelvis rather higher than the trunk, on a firm flat table, with only two or three thicknesses of blanket under him. The rectum should have been previously emptied by a dose of oil given on the night preceding the operation, and the urine should be retained for a short time previous. The patient secured, let the assistant who is to hold the staff be placed on the patient's left, and a second assistant on his right, to support the rectum with a cloth, in case of prolapsus. The staff is then to be introduced. If you are quite certain of the existence of a stone, I would advise you not to delay the operation because you do not feel it when the patient is on the table; and much less would I advise you to ask all the assistant surgeons to satisfy themselves of the presence of the calculus. During these painful and protracted manœuvres, the urine is often discharged, and you lose the advantage of its presence in the bladder. Let only one of the assistants sound, and in doing so press the urethra against the groove of the staff to prevent the escape of urine. Exhort your patient not to strain; and while you are encouraging him with the hope of speedy relief, mark with your eye, but more especially by feeling with your finger, the exact situation of the two tuberosities of the ischia; the divergence of these two bones, the lower border of the triangular ligament, and the bulb of the urethra. The bulb is situated directly at the lower border of the ligaments, which to pretty firm pressure will impart a greater degree of resistance than the parts between it and the anus. In a deep pelvis and with enlarged prostate, you may expect to find a deep perineum, and should be prepared to find the bladder, more than usually out of reach. Plan for yourself an incision of a crescentic shape, posterior to the bulb, but near it—nearest it when the pouch of the rectum, as in old men, is much enlarged, and in those whose pelvis is naturally narrow at the inferior strait. Let its convex side be next the bulb, its horns between the anus and the tuberosities of the ischia, not below the centre of the anus, for here are the hemorrhoidal vessels; not within a quarter of an inch of the ischia, for by approaching the bone too closely, the incision might reach the internal pudic artery. Now, covering the anus with three fingers of the left hand, press the rectum backward and tighten the skin of the perinæum. As a general rule, make your incision one inch and a quarter anterior to the anus, and in length about one inch and three quarters, with slight convexity forwards. When the incision through the skin is completed, pass the fingers of

the left hand into the wound, so as to tighten the fascia to be cut and to press back the rectum. If you fear you are approaching too near the bowel, put your finger into the rectum, and ascertain the relations of the incision to that part. Continue the incisions in the same plane, but rather more forward, especially if you find your cut very near the rectum, for the gut bulges forward as it ascends. Continue to press back its anterior walls,—now pass the finger deep into the centre of the wound, and turning forward its radial edge, feel for the staff and for the bulb of the urethra. Holding your finger upon the bulb and the nail upon the staff, pass a small bistoury beyond it, and cut the membraneous part of the urethra upon the groove of the staff. This part of the urethra is surrounded by a dense fibrous sheath, the knife for dividing it should be sharp at the point or very narrow. It is not uncommon to witness delay in exposing the staff; this I believe arises from not having the urethra stretched by a large staff, from miscalculating the thickness of the fibrous sheath surrounding it, or lastly, from using a broad pointed knife. The membranous portion being divided, pass the beak of the bisector into the groove, and holding the staff with the left hand, glide the bisector with the right hand along the groove until the escape of urine advises you that the section is completed. The angle which the bisector should make with the staff, should be just enough to keep the beak in the groove. If the patient is young, you may be well assured that you can reach the bladder with the finger. So you will in adults and old persons, unless the pelvis is deep or the prostate enlarged. In the latter cases only you may leave the staff in the bladder to guide the forceps; but in my own practice, I have always withdrawn the staff as soon as the section of the prostate was completed, introducing my finger into the wound at the same moment."

Of the Resistance to the Extraction of a Calculus.—After several remarks upon the bladder, bones of the pelvis, &c. Dr. Stevens sums up, by saying:—

"I consider the resistance to arise from the capsule of the prostate, and the neck of the bladder; from the transversalis muscles when not divided on either side; from the levator ani and its investing fasciæ."

The following experiment, which was made upon a male subject, about 35 years of age, four days after his death; in cold weather, is instructive:—

"A grooved staff was introduced into the bladder, and a transverse incision, one inch and a half long, and one inch anterior to the anus, was made upon the staff into the membraneous part of the urethra, and the prostatic bisector was introduced along the groove into the bladder. The bisector and staff, placed in position, measured three inches and a half in circumference. The fundus of the bladder being then opened, it was ascertained that the incision had approached within one or two lines of the sides of the prostate, which, however were not entirely divided.

A large forceps was then introduced, and an egg-shaped stone properly placed within its grasp. The stone and forceps, measured together, gave a circumference of nearly six inches. The instrument, with its blades perpendicular, was then pulled upon with a force that might have been sufficient to lift a weight of twenty pounds, and moved from side to side and up and down. The largest circumference of the stone did not pass out of the bladder until the traction was increased to forty pounds. A very moderate degree of force then sufficed for its removal; but there was a sense of tearing, as the stone passed through the external incisions. It seemed that the fibrous capsule of the prostate had offered the first and greatest resistance; the levator ani the last.

The tract of the wound was next exposed to view, by extending the left side of the incision through the bones and soft parts, so as fairly to lift them over to the right side of the pubes.

In the posterior plane was the lower half of the prostate apparently not much contused or lacerated, (the lower blade of the forceps had covered this;) between it and the anus were the longitudinal fibres of the rectum about a line in thick-

ness. On the right side of the prostate were some stretched and lacerated fibrous shreds, like fine cotten thread, connecting the upper and lower halves of the prostate at their edges. Between this part and the right extremity of the external incision, were indistinct portions of muscular fibres, parts of the levator ani and of the transversalis. On the left side of the prostate, where the incision had been extended after the removal of the stone, a large plexus of vessels, filled with venous blood, was brought into view. The parts were then carefully smoothed with the handle of the scalpel, and with this and the finger the loose cellular tissue was separated until three pouches or cavities, more or less connected with the tract of the wound, were brought into view;—the first, high up on the right side, was bounded externally by the obturator internus muscle, internally by the bladder and prostate, and inferiorly by the levator ani; below the levator ani was another pouch which extended in front of the sacrum and behind the rectum; between the rectum and the bladder was a third cellular space in which the cellular structure was rather less loose than in the other two."

The lecture from which we have made the preceding extracts, will repay perusal amply.

Royal Infirmary of Edinburgh.

The Dangers of Lithotrity. By W. Fergusson, F. R. C. S. E. &c., one of the Surgeons to the Royal Infirmary of Edinburgh.*

Our readers are aware that, from the first, we pointed out the exaggerated notions that were entertained by many and expressed by some, in reference to the value of lithotrity. Time has in all respects confirmed our anticipations, and the danger at present appears to be an unreasonable dislike to the operation. Lithotrity has led to the crushing and extracting of small stones—to the better sounding of the bladder—to the investigation of the symptoms of calculus at an early stage by surgeons, and to a correspondingly early application for assistance by patients. Doing this, lithotrity has done immense service to humanity.

Dr. Fergusson makes some very sensible remarks upon lithotrity. It is not our purpose to quote these, but simply to lay before our readers the facts that have fallen under his own observation.

"I shall state briefly the particulars of certain cases which have occurred in my own practice, and the results of a considerable number more, where I have had ample opportunities of making myself fully acquainted with the details."

The facts then are the following.

Case 1.—A stout healthy man, about the middle period of life, underwent repeated operations with the lithotrite, all of which were attended with great pain; and though at the end of several years no stone could be felt, he was in a worse condition than before coming under the surgeon's hands, in consequence of chronic disease of the bladder, apparently induced by the method of treatment.

Case 2.—Mr. J. was operated on several times with very little suffering. After being fourteen days under treatment, only one small fragment could be detected, which, however, could not be readily grasped with the instrument; he went to the country and shortly after passed a fragment, supposed to be the remainder of the stone. Not long after, symptoms of stone again came on, and about eighteen months after the first operation, he submitted again to lithotrity, and the operation was performed with apparent success.

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* Edinburgh Med. and Surg. Journal, Oct. 1838.

Case 3.—J. W. submitted to lithotrity, and bore the first operation without much pain. In the subsequent attempts, he suffered torment, but notwithstanding, determined to persist, though it was frequently proposed to perform lithotomy. After repeated operations, and great suffering, the bladder seemed clear of all fragments; and ever since he has remained in good health.

Case 4.—R. B. had suffered from stone in the bladder for forty years, firmly resolved never to submit to lithotomy. He felt anxious to undergo lithotrity and put himself under my care for that purpose. I made an attempt to seize the stone without success, and though the smallest possible degree of violence was used, still he suffered excruciating pain, which was followed by a feverish attack, that did not leave him for several months, and since then he remained in a very exhausted condition. After his health was somewhat restored, he at last submitted to the operation of lithotomy, and I removed a large mulberry stone, weighing nearly five ounces. He made a rapid recovery.

Case 5.—The Rev. M. A. subjected himself to lithotrity, but suffered so much after the first attempt, that it was not considered advisable to proceed. Twelve months afterwards, he put himself under my charge, and I removed a small stone by the lateral operation. He made a slow recovery, but, like the patient whose case is last referred to, declared, that in the event of being again the subject of this disease, he would rather submit a second time to lithotomy than to lithotrity.

Case 6.—M. M. much against my advice, submitted to lithotrity; the operation, though performed with the least possible violence, was followed with excessive irritation and pain in the bladder, which continued for the next twelve hours, but was subdued by powerful opiates. In thirty-six hours, the pain returned, and continued without intermission until death, which happened four days after the operation was done. On dissection, the fragments of a large stone were found in the bladder, and a small one untouched. The prostate gland was enlarged, more particularly the middle lobe. The bladder was sacculated, but there was no trace of any injury having been inflicted on it during the operation. Both kidneys were much diseased in this case, and the psoas muscle on the left side seemed converted into a soft mass resembling coagulated blood.

Case 7.—Mr. C. was severely afflicted with symptoms of stone. He consulted me as to the propriety of lithotrity, but I strongly dissuaded him from it. Shortly afterwards, however, he put himself under the care of a professed lithotritist, who broke the stone on one occasion, but could never induce him to submit to a second operation. He has since then suffered much, and is now in a state of great misery, being no doubt in a more deplorable state than before the stone was broken into fragments.

"Many other cases," he proceeds, "have come under my own knowledge or observation, with which, however, I was not so particularly connected as those referred to above. I shall, therefore, only mention them in the following list, which will show the result of my experience and knowledge in cases of lithotrity, which have not been described in any accounts on the subject, as yet published.

Out of eighteen cases in which lithotrity was performed, six have been cured; seven not cured, and five have died.

In one of the number cured, there are strong reasons to suspect a return of the disease; in a another, though no stone can be felt, the patient has suffered almost as much since he was operated on (in consequence of disease of the bladder induced thereby,) as he did previous to coming under the surgeon's care. Indeed, in two of these cases only can the operation be said to have been attended with that happy success, which has been so generally claimed for lithotrity

Of the seven not cured, four afterwards underwent lithotomy, of whom one died and three recovered.

SPIRIT OF THE FOREIGN PERIODICALS, &c.

DISCUSSION AT THE ROYAL ACADEMY ON THE CONTAGIOUSNESS OF PLAGUE AND OTHER FEVERS.

M. Renoult introduced the subject by reading some observations on the Plague, which he had collected together during his residence in the East.

In reference to the question of its contagiousness, he was inclined from all that he had seen to answer it in the negative. He regards the disease as *endemic*, not only in Egypt, but also in Syria and along the whole coast of Turkey. He attributes its diffusion to the filth of the towns, and the uncleanliness of their inhabitants. The better classes, and all those who practice daily ablutions and live temperately, are observed often to escape its attacks entirely, although the pestilence is wide-spread and very fatal all around.

Notwithstanding, however, that such are his opinions, *M. Renoult* approves of the institution of Lazarettoes; but he thinks that they are useful chiefly as a means of quieting alarm and apprehension.

M. Villermé acknowledged that, as he had not himself seen any cases of genuine plague, his opinions upon any subject connected with it must be, in a certain manner, merely speculative. He could not however assent to the doctrine that the plague was attributable to the filth and uncleanliness of the towns and of their inhabitants.

M. Renoult had alluded to the circumstance of the streets being unpaved and thereby becoming wet and muddy, when the heavy rains fall or the rivers overflow their banks; and he proceeded to shew how the mud, being acted upon by the high heat of the climate, passes into a state of fermentation and exhales the noxious miasma, to which he ascribes the origin and spreading of the disease.

All this will not however, explain why the plague is *endemic* in Egypt and other eastern countries, while it is unknown in other countries—for example in America—where the towns, as Vera Cruz, Carthagena, &c., are quite as unhealthy and as badly appointed.

M. Recamier suggested that, in all discussions and disquisitions on the contagiousness not only of the plague but also of other better known fevers, the question is usually considered by medical men in too absolute a point of view. There are, he said, various ways or manners in which certain diseases are transmitted from place to place and communicated from one individual to another.

For example, small-pox may be communicated by direct contact, and also by the effluvia of the disease being conveyed through the air to a distance.

If we study the history of typhus fever, we shall find that its miasm may spread from a single isolated point, and propagate itself *de proche en proche*, until it becomes very widely diffused. How strikingly is this fact proved by what, we are told, took place many years ago at Oxford, during the assizes held there.

Certain criminals, who happened to be labouring under typhus fever at the time, were brought into court for trial; the miasms or morbific effluvia from their bodies must have been diffused for a considerable extent around, for some of the judges sickened with the disease on the very evening of the trial.

If we read the history of the plague of 1720, written by Bertrand and Chicoineau, we see another example of a disease proceeding at first from an isolated point, and gradually propagating itself *de proche en proche* all around; and if we pass from thence to Moscow, we shall find that the pestilence there followed the same course. In short, whatever may be the nature of the origin of the plague, typhus, yellow fever, and such diseases, it appears that, when the morbific miasms are once and fairly developed, they create an atmosphere of infection, which may contaminate those who respire it. M. Recamier concluded by again

pointing out how necessary it is to distinguish the origin of these diseases, and their properties or powers, after they are once fairly developed.

M. Rochoux followed M. Recamier, and expressed his entire concurrence in the doctrines laid down by his experienced friend. He was of opinion that there cannot be a reasonable doubt that typhus is *eminemment contagieux*, and is directly communicable from one person to another.

That there is a difference between the contagious qualities of different diseases is abundantly obvious. Thus an atom of poison is sufficient to reproduce the variolous and syphilitic diseases. On the contrary, a certain amount or dose of the morbific miasm is necessary to reproduce typhus fever; and in this respect the plague may be associated with it. Savaresi has most distinctly stated that the plague is transmissible from one individual to another; and Clot Bey has acknowledged his error in asserting that the disease was not contagious, and has retracted the assertion, which he formerly made. M. Rochoux however admitted that few febrile diseases were so actively contagious, as has been generally supposed; and the extravagance of the fear of the many has had the effect of driving a few observers into the opposite extreme—that of denying their contagiousness altogether. It would appear, however, that he (M. R.) is opposed to the establishment of Lazarettoes; as he concluded by saying, "*all that is necessary to extinguish the disease is to scatter the sick about;*" (il suffit pour eteindre la maladie de disseminer les malades).

M. Chervin quite assented to the opinion of MM. Recamier and Rochoux, that typhus fever is contagious only in certain conditions; or, to express his sentiments in other words, that the disease is not communicable directly from one person to another, but is only transmissible in the way of infection when the atmosphere around becomes loaded with the miasms which exhale from the bodies of the sick. Like the latter, he too was opposed to the sanitary measures usually employed to arrest the progress of the disease. These measures, he said, are pernicious, and withal useless; as we have only to dilute and disperse the morbific miasm, by separating and scattering the patients, to get rid of the disease altogether. To regard a disease as non-contagious, and yet to argue in favour of Lazarettoes is evidently a self-contradiction;—a dilemma into which M. Renoult has wilfully allowed himself to fall. He approves of such establishments on the ground of quieting popular alarms; and I, on the other hand, disapprove of them as tending only to increase and keep up such apprehensions.

M. Bouillaud expressed his surprise at hearing any member of the Academy talk of the contagion of typhus fever. It is indeed admitted by all, that whenever a large number of persons, especially if labouring under febrile disorder, is crowded together in an unhealthy space, the atmosphere becomes *fort peu agréable;* but there is a mighty difference between such a state of things and genuine contagion.

From all that I have seen, I verily believe that there is not a single indubitable instance of, what has been called, typhus being communicable from one person to another. When such an occurrence seems to take place, it is always referrible to the atmosphere of the place having become vitiated from unfavourable circumstances. Such being M. Bouillaud's opinion, we are at once prepared to expect that he will unhesitatingly condemn the establishment of lazarettoes.

M. Larrey having expressed his decided opinion in opposition to that of M. Renoult who had been under his orders, that the plague is infectious, and having alluded to the cases of several medical men who had lost their lives from acting upon the opposite sentiment, M. Renoult remarked in reply that, in all the instances to which M Larrey had alluded, the constitution of the patients had been enfeebled and exhausted either by excessive fatigue or by intemperance and other irregularities; and he therefore considered that the argument was not so unanswerable as his senior imagined it to be.

M. Castel was of opinion that much of the disagreement among medical men

on the subject of contagion arose from discussing the question too absolutely and exactly From what he had himself seen of the yellow fever of the new world, he was quite convinced that no one could fairly say either that the disease was always contagious, or that it was never so.

The quality of contagiousness is not essential to perhaps any fever; it is merely an *epiphenomenon*, or adjunct character, which may be present or not, the disease remaining the same in either case.

Discussion at the Royal Academy of Medicine on The Ætiology of Club-feet.

M. Cruveilhier, in his report on a Memoir of *M. Martin*, expressed his assent to the theory which the author had proposed to explain the occurrence of this deformity, and which is based upon the idea that it is attributable to irregular and unequal pressure of the uterus upon the feet of the fœtus, in consequence of a deficiency of the amniotic fluid. He (*M. Martin*) had very ingeniously adduced a considerable number of cases, which, he thought, went to prove the justness of this explanation. In all of them, according to his statement, the women experienced, about the fifth or sixth month of pregnancy, a fixed and often a very excruciating pain in the epigastric, or in one of the hypochondriac regions, according as the child lay vertically or diagonally—this pain he ascribes to the pressure of the uterine parietes against the feet of the child.

The varieties of the deformity are depending, according to this theory, on the relative situation of the one foot to the other at the time when the uterus is exerting its powerful pressure upon them. If but one line is exposed to this pressure, there will be the deformity in one foot only; but if both suffer from it, the deformity will be double. Then too, according as the feet are in a state of flexion or of extension, the deformity will be either a *varus* or a *valgus*.

M. Martin has admitted another element into his ætiological doctrine of club-feet. He supposes that there is a certain degree of atrophy or of tardy development in the feet themselves; in consequence of this, their joints do not acquire the ordinary cohesive ness and strength, and are thus more liable to be affected by the pressure of the uterus upon them. M. Cruveilhier intimated his dissent from this part of M. Martin's theory.

The concluding part of M. Martin's memoir is occupied with a statistical table of the cases of club-foot, which he has had an opportunity of examining. In 61 cases 26 were double, and 35 were single: of these 35, 18 were of the right, and 17 of the left foot. Of the entire number, 45 occurred in boys, and 16 in girls.

M. Capuron related the cases of two women whom he had attended in labour, where there was certainly no deficiency of the amniotic fluid, and yet who gave birth to children affected with club-foot. He was therefore obliged to withhold his assent to the theory proposed by M. Martin to account for this deformity.

M. Bourdon suggested another objection, viz. that club-foot is rarely a congenital affection, but usually occurs a year or so after birth.

M. Breschet expressed his surprise that an able physiologist like M. Cruveilhier could give his assent to such a mechanical theory as that proposed by M. Martin. Under what circumstances can the uterus exert the alleged compression upon the fœtus? If the amniotic fluid be present, such pressure is impossible; and again, if this be discharged or is very scanty, the expulsion of the child is almost sure to follow very quickly. And even if the child is retained for some time afterwards, every physician knows that its death is inevitable.*

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* These obstetrical assertions of M. Breschet are not to be implicitly relied upon,

He (M. B.) attributed this and almost every other congenital irregularity to an arrested or interrupted development of the parts affected.

M. Velpeau,—after renouncing all belief in the doctrine of arrested development as an explanation of congenital deformities, and denying the very basis on which this doctrine is founded, viz. that of the coalescence of the two lateral halves of the body in the median line—expressed his opinion that the idea of M. Martin regarding the ætiology of club-feet might be partially, and, to a certain extent, correct. He alluded to two instances of this deformity in cases where the amniotic fluid had been discharged a month or so previous to delivery. Although not disposed to attach much importance to the mechanical action of the womb on the limbs of the child, he was still of opinion that it may be *pour quelque chose*, in certain cases of congenital irregularity.

The theory proposed by M. Guerin, and which had met with the approval of the Academy of Sciences, seemed to him the true one. This theory, based upon a great number of observations, referred the greater number of monstrosities, as well as of congenital deformities of the joints, to a foregoing organic affection of the nervous centres, and to the convulsive muscular contractions thereby induced. Add to this, that the muscles so affected are struck with a sort of consecutive arrested development, which retards their complete formation; and then you have the real and effective cause of such deformities as club-feet, &c. It is therefore to a disease in the origin of the nerves, or in the nerves themselves, that most instances of monstrosity and of congenital deformity are attributable.

Sometimes we find that the greater part of the encephalon and of the spinal marrow have been destroyed, and then all the muscles of the body are more or less rigidly contracted; at other times, a part only of these nervous centres is diseased—say the lower part of the spinal marrow, as in spina bifida, &c.—and then the muscular retraction is limited to the lower limbs. Every case of club-foot is, in my opinion, attributable primarily to some disease of the spinal cord, or of the nerves of the affected extremity. Certainly no rational physiologist can well believe that any interruption or *arrest*, to make use of the fashionable phrase, of the normal development of the member, can have any thing to do with the production of club-foot. Besides that at no period of intra-uterine life is there any semblance of the deformity in the fœtus, the numerous varieties of this affection must surely quite remove it from the patronage of this theory.

We believe that the same objections are equally potent against the doctrine of arrested development, as explicable of anencephalism and other congenital irregularities.

PHYSIOLOGICAL AND THERAPEUTIC EXAMINATION OF VERATRIA. BY DR. FORCKE OF HANOVER.

The seeds of the *veratrum subadilla* had been long in use as a vermifuge remedy, more especially against the tape-worm, before it was known that they acted in any other manner than as a powerful drastic purgative. They were employed also, as an outward application, to get rid of vermin about the scalp; and in some cases, when thus used in too large quantities, very unpleasant effects seem to have been produced. Schmucker and Herz had recommended small doses in various nervous complaints, as chorea, epilepsy, chlorosis, mania, &c. In consequence however of the uncertain effects of the drug, it had fallen very much into disuse, at the time when the experiments of MM. Pelletier and Caventon in France, and of M. Meisner in Germany, proved that it contained a salifiable alkaloid base of great power and activity: the name of veratrine was given to it. To M. Magendie we owe the first series of experiments to ascertain it phy-

siological and therapeutic effects: these were recorded by M. Andral (the son) in the Journal de Physiologie Experimentale, No. 1, 1821.

A minute quantity of the acetate introduced into the nostrils excited the most violent sneezing; when applied to the throat, profuse salivation, accompanied with a sense of most irritating tickling, was the consequence. Administered internally, it produced violent colic, vomiting and purging; a large dose brought on tetanus and death. M. Magendie contented himself with recommending the external use of veratrine in chronic rheumatism, gout, neuralgia, and anasarca; but it does not appear that he had made many trials on the human subject with it.

Dr. Bardsley of Manchester first, and subsequently Dr. Turnbull of London, are entitled to the merit of having distinctly proved the powerful efficacy of this and some other cognate alkaloids in medical practice. As their works are however well known to the public, we shall now proceed to give a short summary of the researches of Dr. Forcke.

Taken internally, in the dose of a sixth part of a grain and repeated twice or thrice at the interval of a few hours, it causes, he says, a sensation of formication or tingling, and of heat in the epigastrium first, and subsequently in other parts of the body, as the limbs, feet and hands, the forehead, nose, &c. This most unpleasant feeling, as if a myriad of pins' points were kept being gently applied to the parts affected, is accompanied with a sense sometimes of heat, at other times, of cold; and the skin seems to be so very extraordinarily susceptible of the impression of either, that the slightest wave of warm or of cool air is quite painfully disagreeable. Dr. Forcke asserts, contrary to the statements of others, that the effects of the medicine administered for some time do not seem to increase beyond what are manifested during the first few days.

Along with the phenomena now noticed, there is another which is of occasional occurrence and is a very remarkable one: a pain, which has long occupied a certain part, suddenly vanishes altogether, or is replaced by one in some other part of the body. This influence seems to manifest itself *de preference* in organs which have been effected with paralysis or neuralgia.

There are some persons in whom the veratrine seems to be entirely impotent; but the number of these is few, and generally they are old people. The internal use of this alkaloid in most cases causes a certain degree of constipation of the bowels; and hence it may be necessary to have recourse to aperients during its administration.

In illustration of the therapeutic effects of veratrine, Dr. Forcke adduces the following cases.

Neuralgia.—Five cases are reported: in all of them, the suffering was seated in some of the branches of the trigeminus nerve. In the first three, the patients were old women, who had for many years been subject to violent and frequently repeated paroxysms of pain in the infra-orbital nerves. The external use of the veratrine—a scruple of the alkaloid to an ounce of lard—succeeded in entirely removing the disease, which had baffled all other means of medication.

The fourth case occurred in a middle-aged woman, who had for thirteen years suffered from neuralgia of the supra-orbital nerve; the attacks usually came on before each appearance of the catamenia. Frictions with the veratrine ointment were followed by *un succes durable.*

In the fifth case, which was that of a man 38 years of age, the disease affected all the branches of the trigemini nerves, and was so severe that the patient, during the paroxysms of pain, was almost bereft of his reason. The external use of the veratrine was combined with the administration of colchicum in large doses. (The issue of this case is not specified).

Palsy.—Nine cases of partial palsy, affecting different parts of the body, are

related by Dr. Forcke in proof of the efficacy of the veratrine ointment. The first was that of a youth, who had quite lost all use of his left arm, without any appreciable cause: the limb was utterly powerless, and had become much emaciated. The internal and external use of strychnine, as well as various other methods of treatment, had been tried for a length of time, but without success. Frictions with the veratrine ointment were now employed, and ultimately the lad quite recovered the use of the arm.

We shall briefly notice another of the cases. A man of robust constitution presented the following appearances, when he first consulted M. Forcke. The left side of the face was much swollen; its muscles were in a state of complete relaxation; the eyelids were motionless, and the left one was always depressed, so that the eye was constantly exposed. The consequence of this exposure was that the conjunctiva had become much thickened and inflamed, and the sight of the eye was nearly abolished. The branches of the inferior maxillary nerve were affected with periodical paroxysms of most acute pain. The right side of the face was much contracted and wrinkled, the angle of the lip and the wing of the nostril being drawn upwards. The hearing too was dull, and the patient experienced a considerable degree of impediment in his speech.

The internal as well as the external use of the veratrine was commenced; but the amendment proceeding very slowly, Dr. Forcke applied three grains of the alkaloid to the denuded dermis over the places, where the facial nerve and the first and second branches of the trigeminus make their escape from the cranium. Severe pain and irritation were induced: three days afterwards, another grain was applied. The patient began to move his eyelids, and the paralytic state of the face became gradually less and less. The patient, contented with the improvement he had already made, ceased his visits to Dr. Forcke.—*L'Experience.*

The preceding notice of Dr. Forcke's "*Physiologisch-therapeutische Untersuchungen ueber das Veratria,*" quite confirms all that we have previously said, in this Journal, respecting the medicinal powers of this alkaloid. That it is a most active and potent remedy, admirably calculated to relieve many cases of neuralgic suffering, is a *fact* that cannot be disputed by any one who has given a fair trial to it, provided the remedy be genuine and it induces its remarkably peculiar effects on the body. It is however proper to observe that, in some cases, where it has succeeded in relieving the most intense paroxysms of facial neuralgia, this happy result has proved to be of only temporary duration. Still it is of no little importance to be able to mitigate, if not to cure, pain.—(*Rev.*)

INCONTINENCE OF URINE SUCCESSFULLY TREATED WITH THE NUX VOMICA.

The attention of medical practitioners has of late years been called to the very decided effects of this potent remedy in stimulating the palsied fibres of the urinary bladder.

Signor Cerchiari has published two very satisfactory cases treated in this manner. In one of these, the incontinence was attributable to the contusion of the neck of the bladder by the passage of the child during parturition. The patient could not retain her water night or day. The following pills were prescribed.

Take of extract of Nux Vomica 8 grains, Martial æthiops and simple syrup, as much as may suffice to make a mass, to be divided into 24 pills. One of these to be taken three times in the course of the day. A perfect cure was obtained in a fortnight.

The second case occurred in a youth, 19 years of age, who had been subject from his infancy to involuntary discharge of the urine during sleep. The above

pills were prescribed; and a complete cure was obtained in less than fourteen days.—*Bulletino delle Scienze Mediche de Bologna.*

On the Use of Chlorine Inhalation in Catarrh.

Dr. Toulmouche, a physician resident at Rennes, and one of the medical officers of the *Maison de Detention* there, has been engaged for the last five years in ascertaining the virtues of chlorine inhalation in the various forms of bronchitic disease

He usually commences with advising ten or twenty drops of the concentrated solution to about half a pint or so of warm water, and he increases this quantity, by daily adding five drops or more, to sixty or even eighty, according to the susceptibility of the invalid. The solution, it is to be remembered, should always be kept secluded from the light.

The chlorine inhalation he recommends even in acute catarrh, provided there be no co-existent pulmonary engorgement or tuberculous induration. As long as the disease is limited to the mucous surface of the air-tubes, the practice is not only safe, but salutary; and it never seemed to aggravate the inflammatory action.

When however the cough and dyspnœa were very great, or when the idiosyncracy of the patient was opposed to the use of the chlorine, Dr. Toulmouche strongly recommends the inhalation of the steam of hot water in which opium or belladonna has been infused. Blisters applied to the thighs are also highly useful in such circumstances.

As a useful expectorant drink, Dr. T. praises a solution of the chloride of soda; ʒss—ʒj. in a pint of water. The unpleasant taste and smell of this solution are however objectionable to most patients.

Before we give a decided opinion on any case of old catarrh or chronic bronchitis, and before therefore we decide upon any line of treatment, it is most important that we satisfy ourselves as to the real nature of the existing disease, and as to the complications which may happen to be present at the same time. We have already alluded to the not uncommom complication of pulmonary engorgement or tuberculization—two morbid states of frequent occurrence, and on which a bronchitis is very often engrafted. As a matter of course, whenever such a state of things exists, our prognosis must be much more guarded, not only as respects the issue of the case, but also as far as the mere temporary alleviation of present distress is concerned.

Another frequent complication is asthma, depending upon emphysema of the lungs. Whenever this state of the pulmonary tissue exists, we can never hope for an entire restoration of the patient's condition.

A dilated state of the bronchi also is of not unfrequent occurence in cases of chronic catarrh: we may likewise add partial or circumscribed pneumonia in a latent form, pleuritis, effusion into the chest, &c. &c.

Dr. Toulmouche informs us that chronic catarrh *regne habituellement* in the Penitentiary or central house of detention at Rennes; and that it and pulmonary consumption are by far the most frequent diseases in its infirmary. He attributes this to the dampness of the locality, to the cold humid state of the workshops in the Penitentiary, and to certain unwise regulations on the clothing of the inmates.

The number of cases, in which Dr. T. has used the chlorine inhalation in the course of four years and a half, has been 309; of these 228 occurred in females and only 81 in males. This appears certainly rather strange, as from most clinical tales, the number of men affected with the various forms of catarrh

is almost always much greater than that of women. M. Andral distinctly states that the disease is most common in the male sex.

Of the 228 cases, there were 141 of acute, and 63 of chronic bronchitis; in four, the disease was complicated with pulmonary emphysema, and in the remaining 22 with phthisis.

More than one-half of the cases were cured in from two to nine days, after commencing the use of the inhalation. As might be expected, the cure of the chronic disease was more tardy than that of the acute form: on an average it occupied from sixteen to thirty days or so.

Dr. T. has given the reports of numerous cases, to shew the efficacy of the chlorine inhalation in the various forms of bronchitis.

It seems, however, unnecessary to extract any of them. Suffice it to say, that according to these statements, the remedy seems to be a very potent and useful one in checking the profuse expectoration, and in restoring a healthy action of the bronchi.

In conclusion, it may be stated that Dr. T. has no faith at all in any sort of medicated inhalations in genuine pulmonary phthisis; and in the truth of this opinion we (Rev.) believe that almost all practical men will agree.—*Gazette Medicale de Paris.*

REMARKS ON, WITH CASE, OF PNEUMO-THORAX.

The following case lately occurred in the practice of M. Chomel, at the Hotel Dieu.

A man, affected with pulmonary tubercles in a state of softening, was suddenly seized with a violent pleuritic pain or stitch, which caused extreme difficulty in breathing, and considerable febrile action in the whole system.

On examining the chest, it was observed to be altogether fuller and more capacious than it had been, and at the same time to be much more resonant on percussion, while the respiratory murmur had become much more indistinct.

When lecturing upon this case, M. Chomel took occasion to state that, in his opinion, the disease of *Pneumo-thorax* is never idiopathic,—or, in other words, that air is never secreted from the pleural surfaces—but is always the result of a communication between the air cells of the lungs and the bag of the pleura. Such a communication may take place in one of two ways; either by the ulceration of a vomica outwards, as in the present case, or in consequence of a purulent effusion into the pleural cavity being followed by an ulceration at some point of the lungs.

He stated at the same time that he took the same view of tympanites abdominalis—the effusion of air being, according to him, always the result of an intestinal perforation.

Such a perforation may have taken place either from within outwards, as is occasionally the case in some cases of typhus fever, or from without inwards, as now and then happens in consequence of a purulent collection in the abdominal cavity. An instance of this sort occurred very recently in M. Chomel's clinique in a woman, who died from an immense abscess in the pelvis: ulceration had taken place at one point of the large intestine, and had penetrated through all its coats, except the mucous one.

It is necessary to distinguish the peritoneal tympanites, which we not unfrequently meet with in dissection, when there is certainly no perforation of the intestines, from that *alleged* or *presumed form* of the disease, which has been attributed to the secretion of air during life: it is entirely owing to incipient cadaveric decomposition. M. Chomel mentioned a very remarkable instance of this cadaveric tympanites, which he recently met with. A restaurateur in Paris,

who was immensely fat, but seemed to be in very good health, was most unexpectedly found dead in his bed. The body was examined 30 hours after death. The season was Summer. No sooner were the abdominal parietes divided, than a loud explosion, which M. Chomel compares to that produced by the discharge of an air-gun, was heard; so violent was the rush of the confined air from the aperture which had been made into the cavity of the abdomen.

But now to return to our case of pneumo-thorax.

On the following day, after the presumed rupture of the vomica, and the communication between the air-cells of the lungs and the pleural cavity had taken place, the expansion and also the resonance of the thoracic parietes were found to have considerably increased.

In proportion as the pneumo-thorax was more decided, the auscultatory signs became more and more distinct and decisive. At the lower part of the chest a sound, analogous to the amphoric bruit, was perceptible; and more externally a distinct metallic tinkling was to be heard. Over the scapular region a *bruit de secousse*, such as is caused by striking a drum with the finger, was audible when the patient spoke.

Along with these symptoms, there was extreme anxiety and difficulty of breathing, amounting to orthopnœa, &c. and, as we have mentioned above, the chest was remarkably resonant on percussion.

The treatment which M. Chomel adopts in almost all cases of internal perforation, whether of the thoracic or of the abdominal viscera, consists in the exhibition of opiates, until they produce a decided narcotism of the system. The object is not only to quiet the pain which is almost always present, but also bring on a state of *inertia* of the whole system, so as to permit Nature to exercise her own medicative and reparatory efforts.

From the results of several cases of presumed intestinal perforation, this treatment certainly seems to be by far the most advisable.—*La Lancette Francaise.*

Observations on the Perforation of the Intestines by Worms. By Dr. Mondiere of Loudun.

We may premise the following remarks by stating that a perforation of the intestines by worms may take place in two ways—*either* by the worms lodged within the alimentary canal making a way outwardly into the cavity of the abdomen, or fairly through the abdominal parieties, *or*, by the bursting of an *abscès vermineux*,' (developed, as such usually are, in the inguinal and umbilical regions) into some part of the canal.

[This distinction is not very perspicuous, the language of the writer being obscure.—*Rev.*] As the main object of this memoir is to affords proofs of these occurrences, we shall at once proceed to mention a few illustrative cases.

A young girl had been for a length of time troubled with worms, many of which she had passed at different times, not only from the rectum, but also from the mouth. After a violent attack of colic, induced by the exhibition of some vermifuge medicines, a small swelling made its appearance in the left iliac region. At first it was attended with a heavy dull pain; this was afterwards replaced by a most annoying sense of pricking.

The swelling became gradually larger and softer, as well as more prominent; it was opened, and a quantity of pus escaped. But what was our surprise, when we observed a *lumbricus* worm, five inches and a half long, discharged at the same time! Notwithstanding this, the abscess healed up, and the patient experienced no subsequent inconvenience. It is particularly to be observed, in reference to this case, that in the discharge from the abscess there was not the slightest trace of any intestinal matter in it.

Dr. Mondiere is of opinion that, in such cases, we may fairly suppose that the worm has not made any regular ulcerated perforation in the parietes of the intestine, but has merely separated (*ecarté*) the fibres of the canal, and that thus no fistula has been occasioned.

Medical men have been much puzzled to explain such an occurrence as the preceding. Thus M. Destrez, who has recorded a case very similar to ours, asks: "whence are we to suppose that the worm proceeded? It must indeed have been developed in the intestines; but how did it escape, without causing a perforation of their parieties, and, if so, without being attended with the symptoms of intestinal rupture? It may possibly have come from the appendix vermiformis, whence it might escape without such serious consequences."

That M. Destrez's conjecture respecting the appendix vermiformis cannot be received is manifest from the tumors, of which we are now treating, being observed frequently on the *left*, and not on the *right*, side. In the following case, the swelling was in the umbilical region.

A girl had long suffered from attacks of *verminous colic*; an abscess formed near the umbilicus; along with a copious discharge of purulent matter, a round worm, dead, and between four and five inches in length, escaped from the orifice. The abscess however gradually healed without any unpleasant symptoms.

Dr. Mondiere alludes to a case which occurred many years ago to M. Chailly (and which is recorded in the *Nuovo Giornale della piu recente Litteratura Medico-Chirurgica d'Europa*, for 1795), of a young child, in whom an abscess formed in the hypogastric region giving exit to a *strongylus*, and who recovered perfectly.

In the *Journal des Progres*, for 1834, is related the case of a negro, 11 years of age, in whom after a most severe attack of *verminous dysentery*, during which a great many *lumbrici* were evacuated, there formed near the umbilicus an abscess, which gave exit to a dead *lumbricus*.

Dr. Mondiere here alludes to the occasional, but certainly rare, occurrence of *entozoa* making their way from the intestines into the urinary bladder, through the parietes of both viscera; and he explains the process or manner in which this is done, by referring to his previous observations respecting the gradual *ecartement* or separation of the fibres of their different coats effected by the animalcula, without this being necessarily accompanied with an ulcerated perforation.

We do not intend, however, that it should be supposed that an ulcerated opening through the intestines is never occasioned by the escape of worms from their cavity. That such is really the case sometimes is made manifest by numerous instances on record. Take for example the following case.

A girl, 12 years of age, died dropsical and in the last stage of scrofulous disease. On dissection, the small intestines were found to be perforated in five or six different places; and hanging from these apertures were observed *lumbrici* more or less completely protruded. Other worms, of the same description, were found in the abdominal cavity, floating in the serous effusion which was there. The apertures in the intestines corresponded exactly with the size of the lumbrici.*

Rem:—Dr. Mondiere seems to think that, in this and in similar cases, the perforation took place after death: if so, we cannot regard it as an example of *ulcerated* opening.

Dr. M. sums up his observations in the following propositions:—

1. Intestinal worms may make to themselves a way through the walls of the bowels and even through the abdominal parietes, by merely separating, and, as it were, splitting the fibres of the intervening tissues, and not, as has been commonly imagined, by gnawing and corroding the parts.

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* Journal der Pract. Heilkunde, 1834.

2. The immediate obliteration of the passage through which the worm has escaped, is to be attributed to the contractility of the intestinal fibres, and to the closure thus effected.

3. Cases of the escape of intestinal worms have been usually noticed in persons, who have been annoyed with vermination, and who may have voided many of those entozoa both upwards and downwards.

4. We are ignorant of the cause which leads these animalcules to move about: in some cases it would seem to be owing to the irritation excited by acrid anthelmintic medicines.

5. The symptoms, which have been noticed to be induced by the escape of worms through the intestinal parietes, are usually a painful pricking or puncturing pain at one fixed part, and then the formation of a phlegmonous swelling over this part; the swelling becomes gradually larger and softer, till at length it breaks or is opened, and the worms are discharged along with the pus.

6. These swellings may form at any part of the abdominal circumference; but most frequently they are observed either in the umbilical or in one of the iliac regions.

7. Cases of this sort generally do quite well; the abscess healing up without any unpleasant symptom, or sign of intestinal lesion. In some cases, the worms, have made their way into the urinary bladder, without causing any extravasation.

Of a much more serious character is the *second* description of cases, in which intestinal worms make an opening for themselves through the parietes of the bowels. In this, the worms having been congregated and agglomerated together at one point, at length excite inflammatory action in the part; the intestine becomes adherent to the opposed surface of the abdominal parietes; an abscess is formed, and when this bursts, the purulent matter which escapes is blended with worms, and also with the other contents of the bowels. The last named circumstance—the admixture of fæculent matter with the discharge—establishes a strong line of demarcation between this and the preceding description of intestinal perforation. The former, we found, was attended with comparatively very little seriousness or danger; the perforation seldom or never giving rise to any alarming symptoms. The latter is necessarily of much greater moment. Extravasation of the intestinal contents into the cavity of the abdomen is indeed of rare occurrence; this calamity being prevented by the adhesion of the intestine to the abdominal parietes; but a dangerous fistula, communicating with the gut, may be established, and may remain open for a great length of time. In many cases however, which may seem alarming at first, the abscess, which has given exit not only to worms but also to fæcal matters, will be found to heal as rapidly as if it had been a simple phlegmon.

Case. A woman, 33 years of age, who had been annoyed with intestinal worms more or less from her infancy, found, after suffering for some time from colicy pains in the right flank, a tumor in her right groin; the swelling increased gradually in size and prominency, and, as it became more soft and pointed, she felt a strange moving or creeping sensation in it. No fluctuation could be detected in it, when Dr. Mondiere first visited this patient. In the course of a few days, however, the apex of the tumor having become gangrenous, a bistoury was plunged into it. A quantity of ordinary pus was discharged. On the following day a dozen of worms (ascaris lumbricoides) issued from the wounds; some of these were still alive and moved about freely. During the next three or four days, seventeen more worms were discharged; and along with them some fæculent matter. Notwithstanding this unpromising state of affairs, the abscess healed slowly but kindly, and the patient's health, which had never suffered much, was completely restored.

Case 2. A child, seven years of age, had been subject, for upwards of a twelvemonth, to attacks of sharp, abdominal pain about the umbilicus. A phlegmonous swelling made its appearance at length in this region; it gradually became softer and more prominent, and burst. In the purulent matter, which flowed out, was found a dead *lumbricus* worm. A fistula remained open for a great length of time; and at length upwards of forty living worms were passed *presque tout à coup*. The fistula continued open, and gave exit to eleven more worms. It had not healed at the date of the report, but had acquired all the characters of stercoral fistula; the attacks of colicy pain had however ceased.*

Case 3. A boy, 14 years of age, after suffering for upwards of a twelvemonth from attacks of violent colic, general decay of health, &c., had a swelling form near to the umbilicus. It was attended with a smart burning and pricking pain; and gradually it became more and more prominent, and at length burst, giving exit to some healthy purulent discharge. On the fifth day after this occurrence, the head of a *lumbricus* worm was observed projecting from the wound; it was pulled out without difficulty. During the following eight days, other three worms were extracted; after the escape of the last one, a yellowish-coloured and fetid matter, which was regarded as fæcal, flowed out. After the lapse of a considerable space of time, another worm, alive and larger than any of the preceding ones, escaped from the wound. This was the last; and the tumor and discharge now began to diminish very sensibly: at length, the wound healed entirely, and the patient's health was completely re-established.†

M. Mondiere has related several other cases, all illustrative of the formation of these *verminous* or *worm* abscesses. He sums up his observations in the following summary.

1. The formation at some point of the abdomen—usually the umbilical or inguinal region—of a tumor which on bursting gives exit to worms, is of occasional, and not very rare, occurrence.

2. These tumors are observed to occur most frequently in those who are and have been much troubled with vermination: hence most cases occur in young persons.

3. It is probable that, in the cases of which we are at present speaking, the worms have congregated at one part of the intestinal canal; that this part becomes distended and then inflamed; that the intestine forms an adhesion to the opposite surface of the abdominal peritoneum; and that ultimately the process of suppuration and of ulceration outwardly is established.

4. The formation of these tumors is always preceded and accompanied by the existence of sharp lancinating or vibratory pains in the part where the tumor forms: this symptom is in some degree characteristic of the nature of the tumor.

5. In many cases, the health of the patient has suffered for a great length of time from obscure intestinal disease, before the tumor has become at all developed.

6. After the bursting of the abscess, a genuine intestinal fistula remains: this usually continues open until all the worms are discharged; and then it heals up without further trouble.

7. The *ascaris lumbricoides* is the worm which in almost every case is discharged. We know however of one or two instances where the worm was a *tænia*.

8. In most cases, there are evident signs that the fistula communicates with the cavity of the intestinal canal. Occasionally, however, it would seem that

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* Il Filiatre-Sebezio 1837, and Gazette Medicale 1837.

† Archives de Medecine, 1838.

the worms, on escaping from the bowels, become enveloped in a cyst, and that the aperture in the tube has healed before the outward abscess bursts.

9. The treatment of such cases is extremely simple: we should do very little, and not interfere with Nature in her efforts to discharge the offending matters first, and then to close up and heal the fistula which has been formed.—*L'Experience.*

Expulsion of a long Loop of the Intestinal Canal by the Rectum.

Three years ago, Signor Vulpes presented to the Medico-Chirurgical Academy of Naples a portion of small intestine, three feet in length, which had been passed from the rectum. The patient, a woman, who had been affected with volvulus from intus-susception, recovered perfectly—except that she was rather subject to flatulent distention of the bowels after food, and that there remained a hardness between the right hypochondriac and the epigastric regions—and she continued to enjoy very good health until last year, when she was seized with enteritis and died.

The dissection of the body was performed with much care, and the pathological specimen obtained was presented to the Academy.

The abdomen contained two pints of a sero-purulent effusion. At the distance of 27 inches from the pylorus, it was found that there was an adhesion of the two portions of intestine which had been severed or divided during the attack of volvulus. These two portions were united together by their outer or peritoneal face, and the continuity of the canal had thus been perfectly re-established. The jejunum was much expanded or dilated, and its parietes were considerably thickened and more muscular than usual, above the seat of union so that it almost resembled a second stomach—and on slitting the gut open, it was found that, at the point of union, the diameter of the tube was very much contracted.—*L'Observatore Medico di Napoli.*

Case of remarkable Pulsation in all the Superficial Veins of the Arms and Neck.

A man, 26 years of age, of a lymphatico-scrofulous temperament, and of a rather feeble constitution, was admitted into La Charité Hospital on the 30th of July, 1835.

In 1828 he had had a severe pleurisy of the left side; and in 1830 he had a smart attack of acute rheumatism.

For ten days preceding his admission into the hospital, he had been labouring under diarrhœa, frequent vomitings, pain in the right hypochondrium, and general feverishness. There was a very appreciable tumefaction of the left hypochondrium, attributed to an enlarged state of the spleen. The respiratory functions did not appear to be much affected. The treatment consisted in the administration of a tartarised potion, the application of leeches to the anus, and the use of *boullon coupé*.

During the first fortnight of the patient's residence in the hospital, there was no amelioration of the symptoms; the action of the bowels was irregular—at one time relaxed, and at another confined—and the febrile irritation had become more and mere decided. The pulsations of the heart were now very energetic and vibratory, and were accompanied with a blowing and occasionally also with a rasping sound during the first beat; blood had been thrice drawn, and at each time it was buffy. At this period it was observed that there was a distinct pulsatory movement in all the superficial veins of both upper extremities, and

in the external jugulars, more especially in that of the right side. This venous pulsation was more sensible in the dorsal veins of the hand than in those of the fore-arm; but it was strongest and most distinct in the jugular veins. Observed in relation to the arterial pulse, it was observed that this always preceded the venous one. The blood during venesection flowed out *per saltum*.

On the 16th of August the following was the state of the symptoms. The bowels were still more or less purged; the pulse was rapid, large, and strong; the first *bruit* of the heart was attended with a slight blowing sound, and a distinct purring tremor (*fremissement cataire*) was audible over the apex of the sternum and over the subclavian trunk; the venous pulsation was generally sensible to the finger.

The patient gradually sunk, and died two days afterwards.

Dissection. The meninges of the brain were highly vascular, and exhibited other signs of decided sub-inflammatory action. There were very extensive adhesions, and a considerable effusion of opaque serosity, between the pleuræ on both sides. Both lungs were highly congested, especially in their lower thirds, and were feebly crepitant. On being divided, a quantity of sanguinolent frothy serosity flowed out, and, here and there, the pulmonary tissue exhibited some *apoplectic points*, when the effused blood seemed to be blended with the proper substance of the lung.

The pericardium was healthy; and the heart was of the normal size, although somewhat laxer in texture than usual. Its *tricuspid* valve was rather thickened at one or two points, and exhibited a fibrinous deposition; and, near the opening of the pulmonary artery, there was observed a pseudo-membranous layer of a yellowish-white colour, as if it were formed of concreted pus. The *mitral* valve was hard, thickened, with irregular nodulated edges; the aortic valves were singularly altered, much thickened, opaque, friable, *obstruant completement la lumiere de l'aorte*.

In the abdomen a small quantity of citron-coloured serum was found; the spleen was much enlarged, weighing more than a couple of pounds, indurated in some and softened in other points, and on the whole highly congested with dark blood. The gall-bladder contained numerous dark-coloured gall-stones, and on the surface of its parietes were observed several distended varicose veins. The liver presented a great number of abscesses of various sizes and degrees of maturation. (*Note.*—There had never been any symptoms of jaundice during the life of the patient.)

Reflections.—A considerable number of authentic cases of venous pulsations —in some of which they were much more general and extended than in the preceding observation—are on record. The phenomenon was noticed.

1. In a young girl who died with hydrocephalic symptoms.(—*Haller's Disputationes*).

2. In a case where vertigo and general pains in the limbs were the most marked symptoms. The phenomenon was observed for three days only, the patient rapidly recovering.—(*Journ. der. Pract. Heilk. Sept.* 1815.)

3. In a man who suffered from syncope, palpitations, and dyspnœa. The dissection did not reveal any satisfactory cause of the symptom.—(*Archiv. fur. Medic. Erfahrung*, 1822).

4. In a soldier who was affected with a *paralysie lente* on the right side, which had commenced on the 1st of December. On the 23rd of January, after a slight amendment, the pulse was full and hard, but not much quickened, the skin was hot, the face flushed, and all the superficial veins of the body and limbs were observed to pulsate—this phenomenon lasted for five days. The skin in almost every part was raised and depressed at each pulsation: even the eyes and the tongue *battaient*. On the 30th, there was coma; but the venous pul-

sations had ceased: they re-appeared two day afterwards, and the patient died on the following day.

On dissection, "the middle semilunar valve of the left ventricle was found to be converted into an osseous concretion, so situated that it obstructed in a great measure the bore of the aorta. The lungs were much congested.—(*Journ. Complementaire, Juin* 1835).

5. In a case of epidemic fever, the venous pulsation was observed for twenty-four hours.—(*Dublin Hosp. Reports, Vol.* 4).

6. Dr. Elliotson mentions the case of a young lady, labouring under chronic bronchitis, in whom all the veins of the hand and fore-arm were observed to pulsate synchronously. The patient recovered.

Dr. Ogier Ward has recorded another example of this rare phenomenon. A woman, 30 years of age, was admitted into the Wolverhampton Dispensary with symptoms of feverish malaise. The pulse was quickened, the breathing hurried and attended with cough. A week after this data, she miscarried; and, three days subsequently to this event, the dorsal veins of both hands were observed to be much distended and to pulsate very strongly. These pulsations were quite appreciable in the digital veins, in which the blood seemed to have a florid arterial hue. They extended up as far as the middle of the fore-arms, and were not stopped by pressure on the veins, unless this was made below, or *distad* from, the point where the experiment was made. These pulsations were isochronous with the arterial pulse, which at the time was hard, incompressible, and frequent. The phenomena lasted for three days; and the patient recovered perfectly.

A curious occurrence was observed in this case—castor-oil did not act as a purgative, but exsuded from almost every part of the body.

With regard to the *rationale* of venous pulsations, physiologists are uncertain whether the phenomenon is to be attributed to the action of the left or of the right ventricle of the heart—in other words, whether it is to be considered as the result of the pulsation of the arterial tubes being continued through the capillary vessels and thus reaching the blood in the veins, or whether it is caused by a retrograde pulsatory action of the right ventricle, communicated backwards from the large to the smaller veins.—*Journal Hebdomadaire.*

THE 'SOUPE A LA MINUTE,' RECOMMENDED BY BARON PERCY.

The following letter from Dr. Vallissier of Metz appeared recently in the Lancette Francaise.

"Having just finished reading the account, given by the Surgeon-General Baudens, of the expedition against the city of Constantine, it has occurred to me that it may prove useful to recall to the attention of the public, and more especially of military men, the receipt for preparing a 'soupe à la minute,' so much recommended by our distinguished countryman Baron Percy.

Six pounds of butter are to be put into a large saucepan; this is to be fried with a handful of onions cut small, and with the same quantity of *aulx* (what are these?). The mass is to be well stirred about with a spoon, and as much good flour is to be gradually added as the melted butter will absorb. To incorporate the two better together, we may add a pound or so of olive oil to the mixture. A sufficient quantity of salt and pepper is to be added, to give flavour to it, and to fit it for keeping. As the mess cools, the stirring is to be continued very steadily; and when it is quite cold and stiff, it should be preserved in pots or tin-cases.

The above quantity of materials will suffice to make 45 basins of soup. A piece of the size of an egg may be dissolved in three pints of water, and will furnish a very palatable and nourishing aliment.

Such is the substance or material recommended by Baron Percy for soldiers, who are about to start on a march, where they may find difficulty in procuring food. Each soldier may carry a supply with him sufficient to last for a week or two; and all that is necessary for the preparation of the soup is water and a fire to heat it with. The soup thus obtained is much preferable to that made with most of the dried gelatine, which is sold now-a-days, but which, according to the experiments made by MM. Donné and Gannal, is very far from being nourishing."

REMARKS ON SOME CURIOUS CASES OF SIMULATION.

Some of the French journals, have lately been astonishing their readers with an account of a woman, who 'although fresh and healthy, had not touched food for a year and eight months, nor had any excretions during all that time, and who yet was suckling an infant six months old!' This woman was first under the care of M. Caillard, and subsequently of M. Magendie, at the Hôtel Dieu in Paris, where she still remains. We, says the reporter, have repeatedly seen her, and from the very first suspected an imposture: and so it has proved. When admitted into the hospital last September, her tale was that, for the preceding year and a half, she had not tasted any food, and that she had acquired the power of living without eating. For the first few days after her admission, she certainly did not take any nourishment, leaving untouched all food, fluid as well as solid, that was left within her reach.

She was put into a small room by herself and various articles of diet,—all of which had been previously weighed and measured—were left at her disposal. It seems that she had resisted all the cravings of appetite for eight days; but on the ninth day she began to eat, and has continued to do so ever since. On examining the mattrass, numerous pieces of dry feculent matter were found concealed in the wool. Here then was an end of this *extraordinary* tale, which some of the journalists were making such a fuss about.

If we now ask ourselves, what possibly could have been the motive of this woman's conduct, and what interest was to be served by this most strange imposture?—perhaps the only answer we can make is, that it was the love of notoriety, of being spoken about, and, in short, of being the subject of curiosity to others. This in truth is a very strong feeling in many minds, and will often impel the vain and foolish to extraordinary acts of self-punishment.

Perhaps it is this motive, more than any other, which has caused so many young females to be misled by the practices of the animal magnetiser, and to simulate so many fantastic feelings and sufferings. But to drop any further allusion to these, it may be amusing to mention briefly another case, similar in many respect to the one, we have already recorded, of the woman in the Hôtel Dieu.

About fifteen years ago, there was a woman in the wards of La Charité, who *it was said*, had not voided by the natural passages 'le moindre atome, of fæcal matter or of urine, for the space of two years. The former, it was alleged, was evacuated by vomiting, and the urine partly in this way, and partly by oozing from the umbilicus. The truth of all this was very generally believed, at the time, in the hospital, both by the pupils and by Professor Leroux. It was even published by M. Nysten, in one of the journals, as an extraordinary case of aberration of the normal functions! It was indeed quite true that the patient was seen to vomit every day, a portion of fæcal matter; and she kept a piece of sponge to wipe away the urinous moisture from the umbilicus. No person suspected a trick, until old Boyer, observing that the vomited fæces were of a rounded form and consistent, remarked that they must have come from the large, and not the small intestines. The sagacious remark excited the curiosity of the

attendants, and precautions were accordingly taken to guard against further imposition, if this had really been hitherto practised. The woman was made to wear a pair of drawers, which were secured round the body and ancles, so that it could not be undone, without being discovered; and the hands also were covered with gloves, which were then stitched to the sleeves of a waistcoat. An attendant remained in the apartment all night.

She repeatedly indicated great uneasiness, complained of pain, and kept her hands applied to the stomach; still she asserted most positively that she had no desire to pass either urine or stool; but that she felt the severe pain which always preceded the oozing of the urine from the umbilicus.

In the morning her distress was extreme, and the abdomen was found to be exceedingly distended. In the course of the day, "elle n'y put plus tenir;" for she urined so abundantly that the mattras of the bed was wetted through and through. It was now discovered that she had concealed under the bolster a quantity of dried feculent matter; portions of which she had no doubt been in the habit of swallowing, for the purpose of afterwards vomiting it up again, in order to keep up the strange imposture, which she had most unaccountably thought of practising.—*Bulletin General de Therapeutique.*

On the Presence of Urea in the Blood.

It has long been a problem of much interest, and of no easy solution, in physiology to determine whether the secretions of the body are eliminated and prepared by the secretory organs themselves, or whether they already exist, formed in a more or less perfect degree of composition, in the blood itself, and are merely separated, and, as it were, drawn off from it at the different emunctories.

Most of the chemical physiologists have been inclined to adopt the latter of these two opinions, and it has been supposed that considerable probability has been added to it by the experiments of MM. Provost and Dumast, wherein they discovered the presence of urea in the circulating blood of animals, from which the kidneys had been extirpated.

It would seem, however, from the recent very careful researches of MM. Mitscherlich, Gmelin, and Tiedemann, that they could not discover the smallest traces of urea in the blood of a healthy animal; although by previous experiments they had assured themselves that they were able, by chemical analysis to discover so minute a quantity as a 250th part (of a grain?) of this animal product in blood, (on pouvait retrouver encore 1,250 d'urêe dans le sang.)

M. Marchand states that he has repeated their experiments with the most minute accuracy, and has obtained the same results.

Deeming it, however, not improbable that a minute quantity of any substance like urea might be so entangled and, as it were, involved in some of the constituents of the blood, that its presence might be more or less completely disguised from the researches of the analyst, M. Marchand has performed numerous experiments to determine the question.

For example, he took 200 parts of the serum of blood, and mixed one part of urea with it; the fluid was then heated in a sand-bath, until the albumen freely coagulated, and when it cooled the urea was sought for by the most delicate tests. But not more than one-fifth of it could be detected: how the rest of it was withdrawn or disguised, M. Marchand was not able to satisfy himself.

He also found that the fibrine and the colouring matter of the clot had a similar effect, as the albumen of the serum, in this respect: the entire quantity of the urea, which had been blended with them, could never be discovered.

M. M. invites the attention of animal chemists to this fact, as the knowledge of it cannot fail to affect very materially the results of many of their analyses.

Thus he alludes to some researches of his own regarding the presence of urea in the fluid of dropsical effusions. Whenever the quantity of albumen present in the fluid was inconsiderable, the urea was often easily detected; but when it was greater, all traces of the salt were absent.

Although, therefore, no urea can be discovered in healthy blood, it is far from being improbable that it does actually exist, in small quantity, in it.

We shall now briefly allude to the circumstances under which urea has been found in the blood; and the first, that we shall make mention of, is when the kidneys have been extirpated in the lower animals.

The names of the experimenters—MM. Prevost, Dumas, Mitscherlich, Tiedemann, Gmelin, &c.—afford a sufficient guarantee for the correctness of the statement.

M. Marchand deemed it therefore quite unnecessary to repeat the experiment; but he varied the manner of performing it in the following manner. He passed a ligature round both kidneys of a healthy sheep, (dans un mouton sain, en une seule fois je fis la ligature des deux reins.)* When he deemed that the mortification was complete, the ligatures were removed, and the wounds were united by means of stitches: in a short time they healed. The animal, from the day of the operation, became exceedingly low and feeble; but it lived for nearly a fortnight. It was killed by opening the jugular vein, for the purpose of collecting as much of the blood as possible. Not more, however, than a pound could be obtained, before the animal expired.

M. Marchand took 400 grammes of this, and evaporated it to dryness in a sand-bath: rather more than two grammes of urea were thus obtained. Traces also of urea were detected in the fluid, which had been rejected from the stomach by vomiting.

In human pathology we occasionally meet with cases, which exhibit somewhat analogous phenomena, as in ischuria renalis, Bright's disease of the kidneys, the Asiatic cholera, &c. &c. In all of these diseases the quantity secreted, as well as the quality, of the urine is greatly changed from a state of health. The urine voided during an attack of Asiatic cholera has been found to be quite destitute of any traces of urea.

In one or two cases of this disease, M. Marchand succeeded in detecting urea in the blood, which had been drawn during life. It is well known that several physicians have proved the presence of this animal salt in the blood, in some cases of Albuminuria, or Bright's disease of the kidneys.

We have already alluded to the remark of M. Marchand as to the occasional existence of urea in the fluid of dropsical effusion.

M. Nysten was, perhaps, the first to announce this curious pathological fact in 1811; but his memoir, although presented to the Royal Academy of Sciences in that year, was not published till a few years ago. He discovered urea not only in the dropsical fluids, but also in the fluids which were rejected from the stomach, when there was a complete *ischuria renalis*. Hitherto but few experiments have been made on this subject; but it certainly seems highly probable that the conclusions of M. Nysten are quite accurate, when we call to mind the results of the mortification of the kidneys, as induced in M. Marchand's experiments.

We may here allude to the circumstance of saccharine matter being occasionally discoverable in the blood of patients affected with Diabetes mellitus: the

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* The particulars of this operation are not given by the author, nor the manner in which it was performed. He alludes to the experiments of MM. Muller, and Peipers (Archives für Physiologie, 1836,) as having suggested to him the mode of producing the mortification of the kidneys by means of a ligature.

saccharine matter seems to occupy the place of the urea, as it is well known that this latter principle is almost or altogether entirely deficient in the urinary secretion.—*L'experience.*

On the Action of Diuretic Medicines.

The urinary secretion is liable to numerous changes, in respect both of its quantity and of its properties. In diabetes, the quantity is very greatly increased: whereas in almost all diseases, which are attended with copious perspiration or with diarrhœa, as well as in the various forms of dropsy, the urine is generally scanty.

Again; as to the quality of the secretion we usually find that it is alkaline in chronic diseases of the brain and of the spinal marrow, highly charged with uric acid or with urate of ammonia in gout and rheumatism, albuminous in certain dropsies, in structural disease of the kidneys, &c. and saccharine in one form of diabetes.

Various medicines exert a powerful effect on the urine; operating either directly on the kidneys themselves; or indirectly and through the medium of other organs, as the skin or bowels; or lastly by acting on the blood itself and inducing certain changes in its composition. It is well known that many substances, such as various salts, turpentine, and several colouring matters, are discoverable in the urine, in a short time after they have been taken into the system.

But to confine our remarks to the question before us—viz. the action of diuretics, or those medicines which increase the flow of the urine—we may observe that *diuresis* may be produced either by the direct excitement of the kidneys themselves; or by the removal or counter-action of any existing circumstances, which may be impeding the secretion; or lastly by the use of a large quantity of fluid which thus passes through the system and is subsequently discharged partly by the skin and partly by the kidneys.

In considering the action of diuretic medicines, it may be well to divide them primarily into those which are so in *health*, and into those which increase the urine *only in a state of disease.*

The former class or section may be subdivided into

1. *Acrid Diuretics.*—These act directly on the kidneys, and, if used indiscreetly, may cause inflammation of their tissue, hæmaturia, and strangury. Cantharides, squill, colchicum, mustard, mezereon, &c. belong to this class.

2. *Exciting Diuretics.*—These act as general stimulants of the system. They quicken the circulation, and thus cause a greater quantity of blood to pass through the kidneys than usual. But independently of this systemic effect, they act, even in small doses which do not affect the general circulation, on the kidneys—as is distinctly observed when these organs are at all inflamed or are otherwise very irritable. Alcohol, æther, the ethereal oils, resins and balsams, are the chief *excitant diuretics.* Turpentine may be considered as intermediate, and forming a link, between the former and the present division of this class of medicines.

3. *Saline Alkaline Diuretics.*—These act by first modifying the state of the blood, and by then stimulating directly the kidneys themselves. They cannot, perhaps, of themselves induce inflammation of these organs, although they may revive it, when it has recently existed. They increase the secretion, without accelerating the circulation; and hence they are rather antiphlogistic, than phlogistic medicines.

The various salts of the alkalis, more especially those in which they are combined with the vegetable acids, are diuretics of this class.

That these substances act *directly* on the kidney themselves, after being taken into the torrent of the circulation, is proved by the following circumstances.

a. They are discoverable by chemical re-agents in the urine. The acid is often changed, but the basis or alkali remains unaffected. As far as we know, none of the other two classes of diuretic medicines can be recognised in the urine; for, be it remembered that the mere circumstance of the peculiar odour of turpentine, and of a few other substances, being present in the urine, shortly after they have been taken into the system, does not necessarily imply their actual presence in the fluid.

b. The degree of local action is not in any degree proportionate to the amount of diuresis induced. On the contrary, it rather seems that the less that the kidneys are irritated the greater is the diuretic effect produced.

c. A certain interval of time, from one to several hours, passes between their being taken and the manifestation of their effects. Phenomena, dependent upon sympathetic influence, on the other hand, display themselves very rapidly.

In cases of dropsical effusions the absorption of the fluid, and the cure of the malady coincide with the increase of the diuresis induced by means of the diuretics employed. The diseases too, which are attributed to an acrimony of the blood—as for example, various cutaneous eruptions—are frequently much benefited, and even cured, by the use of these medicines alone. Some physiologists have sought to explain the operation of diuretics in the cure of dropsies, by supposing that they have the power of directly fortifying the lymphatic vessels, and of favouring absorption in this way. But there are no good grounds for this conjecture; and we therefore deem it more wise to believe that they act only indirectly, and that it is by diminishing the serous part of the blood, that they stimulate the lymphatics to compensate for the loss.

We shall now allude briefly to the *second division* of diuretics—which comprehend those which have no immediate or direct effect on the kidneys, and act as provocatives of the urine only in a state of disease, by removing or counteracting any unfavourable existing circumstances.

Of these, bloodletting is one of the most important and efficacious in all plethoric or phlogistic states of the system. Low cooling diet has also a decidedly diuretic effect under such circumstances. Purgatives too, especially those which are saline and those which are hydragogue, are powerful promoters of absorption.

On the other hand, when the system is much reduced, and the vital energies are impaired, the class of tonics, including the various vegetable bitters, steel, &c., is a most potent adjuvant in dropsical cases. In short, very much depends on the *cause* of the effusion, and on the existing state of the constitution at the time that the physician is called. Of late years much attention has been paid to the pathology of dropsy; and there is perhaps not one subject in the whole range of medical literature more worthy of accurate investigation.

It is now established beyond all doubt that numerous cases of dropsy depend upon some disease of the heart. Auscultation has done much to reveal such cases, and has thus led to a more scientific and more successful mode of treatment. Where there is overaction of the heart, the repeated application of leeches over its seat, and the use of antimonials, digitalis, refrigerants, &c.*

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* Perhaps the best formula is such a prescription as the following.

℞. Sodæ carbonat.	..	ʒss.
Potass. nitrat.	..	℈ij.
Sacchari purific.	..	ʒss.
Aquæ distillat.	..	ʒxiss.
Vini colchici.	..	ʒij.
Spir. æther. nitric.	..	ʒij. M.

Three table-spoonfuls to be taken with lemon juice three times daily.

combined with extreme quietude of mind and body constitute by far the most efficacious medication, and not only in relieving the circulation, but also in dissipating any dropsical effusion, which may exist.

Another frequent cause of certain dropsies is a structural disease more or less confirmed, of some of the abdominal viscera—especially of the liver and spleen. Perhaps no class of diuretics is so useful in such dropsies as that of hydragogue cathartics—such as gamboge, elaterium, &c. in union with the supertartrate of potass.

A third not unfrequent cause of dropsy—and this department of pathological enquiry has, until of late years been very obscure—is structural change of the kidneys themselves. This variety of the disease is one of the most serious and least curable of all. All acrid and stimulating diuretics are necessarily injurious. The hydragogue cathartics, such as the compound powder of julep, &c., are to be preferred; and great attention should be paid at the same time to the maintaining of a free perspirable state of the skin.

The only other form of dropsy, to which we shall at present allude, is that which is apt to supervene on inflammation of a serous membrane. This is especially frequent in the chest after pleuritis. In the treatment of such cases, the use of mild mercurials, and of large doses of alkalis, such as the carbonate of potass, constitutes on the whole the best practice. The same remark is applicable to dropsy occurring after scarlatina, &c.—*Archives d'Anatomie, &c. par Muller.*

EFFICACY OF MERCURY AS AN ANTIPHLOGISTIC REMEDY.

M. Delhaye, the author of the following observations, very justly remarks,—

"The wish to explain every thing in diseases is one of the greatest errors in every exclusive system of medicine, whether this be the humoral doctrine, the physiological, or the doctrine of solidism.

There are certain occurrences or facts, which every practical man will admit to be true, and which are yet as mysterious and inexplicable to us in the present day, as they were two centuries ago—thus shewing how little progress has been made in the *physiology of disease.*

In spite of all the ingenuity and earnestness of a very able sect of physicians, who have striven to reduce the various forms of morbid action to a few general and primary elements, we suppose that few, if any, of their disciples will be inclined to deny the existence of certain specific diseases and of certain specific remedies.

Take, for the example, syphilis and its (almost) unquestioned antidote, mercury. Can we give any explanation, in the slightest degree satisfactory, of the essential nature either of the disease itself, or the *modus operandi* of the drug? Certainly *not.*

Again; is not ague an essential and specific form of febrile action? and is not Peruvian bark its antidote, *par excellence?*

All attempts to explain the intrinsic and real nature of the diseases have entirely failed. In short, we believe that there is nothing exclusive in medicine; and for this reason we do not hesitate at once to express our adoption of a rational eclectism, in preference to all the much vaunted doctrines and systems which have been proclaimed for the last 150 years. It seems to us to be a great error, that of supposing that the science of medicine can ever attain to that exactitude and precision, which appertain to those sciences, which have to do with inanimate matter. A chemical result is invariable and uniform—provided the experiments are entirely alike—at all times and in all places. The same is the case with the facts of mechanics and of the other branches of natural philosophy. But this does not hold good in medicine. Not two cases even of the

same diseases are entirely alike; there is always some trait or mark of difference in the vehemence, duration, or succession of the symptoms; and the art of the wise physician is to detect the *physiognomy*, so to speak, of each case, and to deal with it accordingly. Then, too, the influence of the mind and of the feelings on the course of a disease will never be overlooked by the practical man in directing his treatment.

But to proceed to the immediate object of this paper, we shall first mention a few cases, to illustrate the efficacy of mercury in certain forms of ophthalmia.

Case 1. *Chronic Scrofulous (?) Ophthalmia.*—A young girl of nervous irritable constitution, had for some months been suffering from sharp darting pains through both eyes, intolerance of light—so great that she always kept her head bent upon her chest, and the *tarsi* were quite contracted inwards, &c. and these symptoms were attended by loss of appetite and general feverishness. It was a matter of difficulty to ascertain the state of the eyes, in consequence of the spasmodically closed state of the lids. The cornea of the left eye had partially lost its transparency, and presented a deep ulcer on its lower half. The right eye seemed to be only sympathetically affected.

Dr. Delhaye says that, when this case was first submitted to him, he was a most believing proselyte to the doctrines of the physiological school, and that he therefore advised bleeding, leeches, blisters, low diet, &c. The disease however was not at all mitigated by this treatment.

M. Stievenart of Mons, a distinguished oculist, was called into consultation. Agreeing with Dr. Delhaye as to the nature of the disease, he suggested the omission of all depletory and lowering measures, and the use of small doses of calomel and belladonna—a pill, consisting of a fourth of a grain of calomel and a sixth of a grain of powdered belladonna leaves, to be taken every four hours—of an opiate collyrium, and of frictions upon the eyelids with the extract of hyosciamus, thrice daily.

On the third day after the adoption of this treatment, the patient could look at objects without much uneasiness, and by the end of the week both eyes were well, with the exception of the ulcer on the left one.

It is to be observed that a nourishing and somewhat generous diet was administered at the same time, *malgré les symptomes de gastrite*, adds Dr. Delhaye.

Case 2. A child, who from her infancy had been subject to repeated attacks of opthalmia, was seized in her seventh year with scarlatina, which was accompanied with severe thoracic symptoms. Purulent effusion into the right cavity of the chest took place, and required the operation of paracentesis thoracis. While recovering from this dangerous affection, the eyes, more especially the right one, became the seat of a most distressing opthalmia. There were frequently recurring sharp pains through the orbits, great intolerance of light, &c. Antiphlogistic measures were used for some time, but without any advantage.

Dr. Delhaye, remembering the happy result of the former case, now adopted a similar treatment, although he was in some degree afraid of a mercurial action in a system so debilitated. The calomel and belladonna were given in small doses, the eyes were bathed with a mildly anodyne wash, and a nutritious regimen allowed. The cure was complete by the twelfth day; and it is worthy of remark that the fistula in the side—for this was still open—had nearly cicatrised by the same time.

Case 3. A girl, 18 years old, and of a lymphatic habit, had been subject from her childhood to attacks of ophthalmia, which had caused slight opacity of both corneæ. The present attack was a very protracted one, and was attended with much constitutional disturbance. Leeching, blistering, &c. had been tried without effect

The treatment recommended by M. Stievenart was therefore adopted, and, by the end of the second week, the ophthalmia had almost completely disappeared.

Mercurial Inunction in Peritonitis.

Dr. Delhaye reports three cases to illustrate the efficacy of this mode of treatment. According to him, two were cases of entero-peritonitis occurring within a week after delivery; the third case was one of chronic entero-peritonitis in a woman 60 years of age.

It seems to us unnecessary to give the details, as the reports are rather prolix and vague.

Dr. Delhaye attributes the practice of mercurial inunction on the abdomen in puerperal peritonitis to M. Vandezande of Anvers, and seems to regard it as one of the greatest discoveries of late years in practical medicine. An ounce or more of the strongest mercurial ointment is rubbed in every 24 hours, until a decided effect is induced.

He strongly recommends the same mode of treatment—the inunction of the mercurial ointment on the limbs, &c. so as to induce a decided ptyalism quickly—in cases of chronic inflammation of the meninges of the encephalon and of the spinal marrow.

His memoir closes with the report of several cases of very troublesome *onychia*—wherein a nail had grown into the flesh of the finger, and had caused severe irritation and sometimes ulceration also—quickly relieved by keeping the parts well covered wtih the strong mercurial ointment; of chronic scrofulous abscesses and sores treated successfully in the same way; and, lastly, of the phlegmasia alba in puerperal women.—*Bulletin Medical Belge.*

INFLAMMATION OF THE UMBILICAL VEIN IN INFANTS.

(We are not aware that the attention of English pathologists has been drawn to this disease, although it seems to have been noticed by our continental neighbours both in France and Germany for a good many years.)

MM. Osiander, Meckel, and Sasse were the first who described phlebitis of the umbilical cord. M. Duplay has recently had an opportunity of examining several cases of it at the Hôpital des Enfans trouvés at Paris; and the following is a brief abstract of his paper in a late number of the *L'Experience.*

In his *first* case, that of an infant which died on the fifth day after birth, purulent matter was found in the umbilical vein from the navel to its entrance into the liver: the small intestines exhibited here and there points of inflammation and ulceration.

In the *second* case—neither the age, nor the symptoms present during life are mentioned—the umbilical vein was found full of pus, and its parietes were somewhat thickened: the umbilical arteries also contained pus. Purulent matter was found in both auditory passages, and likewise under the arachnoid membrane. Both pleuræ were coated with pseudo-membranous pellicles of recent deposit.

Third Case. An infant died on the tenth day after birth, having been affected from the fourth day with colicy pains, diarrhœa, vomiting, and meteorism of the abdomen. The peritoneum was found on dissection to be inflamed and partially coated with a membranous deposit, and there was a sero-purulent effusion in the abdominal cavity. The branches of the vena portæ, and especially the umbilical vein, exhibited a preternatural turgescence: this was found to be owing not so much to congestion, as to a thickening of their parietes. The trunk of the umbilical vein was a full line in the thickness of its walls, and

its branches were even more remarkably affected. The cavities of all these vessels were coated internally with membranous deposit.

In the *fourth* case, the infant died on the seventh day after birth, after having suffered from severe pain in the bowels, vomiting, icterus, &c.

On dissection, all the morbid changes characteristic of peritonitis, were discovered: the umbilical vein and its branches were thickened, and lined with purulent matter internally.

Case fifth.—An infant died on the third day after birth, in consequence of an erysipelatous affection of the body.

The intestines and liver were found to be inflamed, coated with lymph, and also with a puriform exsudation. The umbilical vein, from the navel to its insertion in the liver, was filled with yellow pus.

In the *sixth* case, the infant was affected with symptoms of icterus, purulent ophthalmia, and an erysipelatous affection of the face, having a tendency to gangrene here and there: it died on the tenth day after birth.

Along with certain morbid changes in other parts, the umbilical vein was found to be filled with puriform matter, and to have its parietes considerably thickened.

General Remarks.—Our knowledge of the history of phlebitis of the umbilical cord is too imperfect to warrant us in speaking, with any certainty, on any of its characters or features.

As to the *cause* of disease, M. Sasse and others have attributed it to the irritation arising from the ligature of the cord, and from the ungentle attempts, sometimes made, to squeeze the blood out from it.

The *consequences* or *effects* of the lesion seem to be usually peritonitis, icterus, and rapid exhaustion of the vital energies.—*L'Experience.*

ON FOUNDLING AND BASTARD CHILDREN IN FRANCE AND IN OTHER COUNTRIES OF EUROPE.

During the course of the last year (1837) the Abbé Gaillard published a very interesting and instructive work, entitled "Recherches Administratives, Statistiques et Morales sur les Enfans trouvés, les Enfans Naturels, et les Orphelins en France, et dans plusieurs autres pays de l'Europe," and which was *couronné* for its merits by the Academic Society of Maçon. The *first* part is taken up with statistical tables of the number of illegitimate births throughout France, and of the proportion which these bear to the entire number of children born. From these it appears that the number has been increasing progressively each year from the revolution of 1789, down to the present time; that the proportion of illegitimate to the total number of births throughout the kingdom may be stated as one to fourteen; that this proportion is much higher in the department of the Seine, than in any other—being nearly as one to three in it—and that it is invariably greater in the manufacturing than in the agricultural districts of the country, and in garrison and sea port towns than in others. M. Gaillard alludes to the *diminution de la foi religieuse* as one of the most potent causes of this preponderance.

In the *second* section of his work, the author has given an admirable historical sketch of the *fate* of foundling children among different nations, ancient as well as modern. He shews by numerous authorities that in ancient times the legislature did not at all interest itself in the preservation of these helpless beings. In Athens and Rome they were exposed and left to perish; and we know that, in reference even to the children born in wedlock, these so-called civilised states

invested the father with the power of putting them to death, if he deemed that he was unable to rear and maintain them. The practice too of inducing miscarriage seems to have been very common among all ranks of society; and we read that women of high family were in the habit of resorting to this infamous means for the sole motive of preserving their youthfulness and beauty.*

M. Gaillard has clearly shewn that the early teachers of Christianity were the first to stigmatize not only this villainy, but likewise that of exposing children, whether legitimate or illegitimate; and that, when this religion became the established creed of the empire, the most severe penalties were enacted against their perpetration.

The institution of foundling hospitals followed, very probably, soon this happy change of things; for we read that there was one in Milan in 787, and one in Rome in 1212. It appears that it was not till the seventeenth century that such an establishment existed in France.

In the *third* section, M. Gaillard examines with great minuteness all the administrative regulations which have been enacted in France, during the last half-century, respecting foundling children: this chapter although well deserving of attention, we must pass over.

The *fourth* chapter treats exclusively of the mortality among foundling children.

In 1789 the mortality seems to have been enormous; not more than two in a hundred survived four years. This frightful havoc is now considerably diminished; but still much might be done to reduce it lower than it is. Among the chief causes of the mortality, we may mention the necessary exposure of the infants in transporting them, sometimes for considerable distances, to the foundling or registration houses, and also the deprivation to the infant of the natural means of support, its mother's milk.

M. Gaillard glances at some of the regulations and usages in other European countries touching the maintenance of foundling children. He condemns the custom in America, and recently adopted in Great Britain, of imposing all the weight of supporting the child on the unfortunate mother, who is generally "more sinned against than sinning." Some of the German States, with the view of diminishing the charge to the State of maintaining so many illegitimate children, have tried the effect of prohibiting marriages among such persons as are very poor and not able to maintain their offspring; but this practical application of Malthusian doctrines has only led to a more wide-spread corruption of morals among the lower orders. Russia has fallen into the very opposite extreme; for, in the foundling hospitals there, the children are brought up and educated in a much more expensive manner than could possibly have fallen to their lot in their parents' houses. But it may fairly be objected that such a state of things is, in fact, offering a premium or direct encouragement to bastardy.

M. Gaillard has stated some curious particulars respecting the proportional number of illegitimate births at different seasons of the year. As might be expected, it appears from his researches that many more illegitimate conceptions take place in Spring and Summer than in Autumn and Winter.

The institution of Lent, a festival peculiarly devoted to prayer and fasting, was wisely appointed by the Catholic Church 'au moment où le printems va allumer le feu des passions.'

Another particular stated by our author deserves notice here, and, if confirmed by the researches of others, it is certainly a curious one. He says that the relative number of male to female births is less among illegitimate than among

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* To say nothing of the *criminality*, we might denounce the *impolicy* of the practice alluded to. A miscarriage tends much more to impair the constitution than a labour. All professional men will admit the truth of this statement.

legitimate conceptions: and that, in some circumstances, the advantage is even in favour of the female sex.*

The concluding part of M. Gaillard's work is occupied with the examination of the various political and moral questions, which relate to the public adoption and maintenance of illegitimate children; how far it is convenient and proper for a state to institute and support establishments for their reception; how, when admitted, they should be treated and educated; in what manner they should be disposed of when they grow up to adolescence; and lastly how far it should be made obligatory on the parents, when they are known, to contribute specially to the maintenance of their offspring. All these subjects are treated with great ability and good feeling by the author, and we can assure our readers that they will be both pleased and instructed by a perusal of his work for themselves. —*Gazette Medicale.*

ON THE DANGER OF BEING BURIED ALIVE, AND OF THE MEANS TO ASCERTAIN DEATH: ACUPUNCTURATION OF THE HEART, &c.

The writer, M. Bourgeois, alludes to several cases of lethargy, extacy, and trance, which have so completely simulated all the phenomena of real death, that the unfortunate victims have been actually carried to their graves, and sometimes even, *horresco referens*, interred before the dreadful mistake has been discovered. In hospitals such an occurrence is especially apt to happen, in consequence of the patients being at once removed to the dead-room, whenever life is supposed to be extinct.

In some parts of Germany, it is the custom to fix a bell-rope in the right hand of each corpse for four and twenty hours preceding burial; and we read of some *Tales of Terror*, of the supposed dead person having, on awaking, rung the bell, and thus saved themselves perhaps the dreadful fate of being buried alive.

M. Bourgeois assures us that when the general exhumation of the *Cimetiere des Innocens*, at Paris, was made during Napoleon's reign—for the purpose of converting the *locale* into a market-place—many of the skeletons were found in such attitudes as plainly indicated that the miserable tenants of the tomb had resuscitated after interment.

It has indeed been conjectured that the change of posture may have been occasioned by the jolting of the coffin, when it is let down into the grave; but we fear that this explanation is not satisfactory. Certainly it will not account for all cases—we allude to those where the skeletons have actually been found fairly out of their coffins, or where too evident signs remain of the interred having been struggling to escape.

The following strange case of lethargy, is related in a recent number of one of the English periodicals. (Query). What Journal is alluded to? *Rev.*)

A medical man suddenly lost all outward consciousness and power of motion, upon hearing of some overwhelming misfortune. It would seem however, that he continued to be quite sensible, within himself, not only of his own existence, but even of the dreadful situation that he was in.

The sense of hearing too still retained some portion of its action; for he could

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* Whether this statement be correct or not, we do not understand the ground of our author's deduction, "that it affords an additional argument, in favour of the embryological doctrine, that the fœtus in the early stages of intra-uterine life is *neutral* as to sex, and that the rudiments of the genital apparatus become feminine or masculine in consequence of some ulterior influence or direction, which although inexplicable is not the less real."—(*Rev.*)

distinguish around him the cries of his wife and children, the voice of the medical man called to his assistance, and he understood from what he said that he was supposed to be dead.*

After a certain time, *indeterminable pour lui*, he was aware of the preparations for his burial, and of his being put into and conveyed away in a coffin; he heard the clod of earth rattle upon its lid; and it was not until he was in some degree *sealed* (*scellé*) that he found himself able to shriek and to move about to prevent the fatal mistake.

Some dreadful cases have occurred where the existence of life was not discovered until the knife of the anatomist had been applied to the body. We are informed that such was the manner in which the Abbe' Prevost, the author of some well-known romances, was sacrificed!

M. Bourgeois then alludes to the most efficient means that can be used to resuscitate life in suspected cases. He mentions the insufflation of air into the lungs, the withdrawal of blood in some cases and the infusion of it in others, the employment of galvanism or electricity, and lastly acupuncturation of the heart.

This last remedy he regards as one of the most active and efficacious. The operation has been long practiced not only with impunity, but often with wonderful success, by the Chinese. Needles may be inserted into and passed through almost any viscus of the body with perfect safety. Even the heart itself may be treated in this manner, and no unpleasant consequences follow.

This has been done in several of the hospitals of Paris, and more especially in the Hôspital de la Pitie', by Professor Beclard: the needles were allowed to remain for several minutes, and were then withdrawn.

Signor Carraro, an Italian physician, has recently made numerous experiments to ascertain the effects of acupuncturing the heart in resuscitating animals asphyxiated by drowning: he reports very favourably of the remedy.—(*Journal Universal des Sciences Medicales, tome* 29.)

M. Bourgeois suggests that the needles might be made the means of transmitting the galvanic or electrical influence through the central organ of the circulation; but he does not speak from experience.—*Revue Medicale.*

Poisoning by Arsenic—Exhumation of the Body, and Conviction of the Criminal, three Years after Death.

The following case may be added to those reported by M. Orfila and others, where the assistance of chemistry has most strikingly led to the detection of crime, many months and even years after its perpetration.

A widow woman, by name Lamothe, had, in November 1833, mentioned to several of her acquaintances that a Madame Chevalier had made her universal legatee, and that she hoped she might soon be in possession of her property, as her friend "ne pouvait pas vivre longtemps." It was long after the date of this foolish speech, that Madame Chevalier did in truth die, after a severe attack of colic accompanied with most distressing vomiting.

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* M. Bourgeois afterwards alludes to this curious circumstance that the hearing seems to have been the only sense, which remained partially active in several cases of trance. He says, 'asphyxiated and lethargic patients have often declared that, during all the time they were in a state of insensibility, they were still in some degree aware or conscious of sounds around them. Several facts establish the fact that soldiers, who were in the act of being buried with military honours, have been awakened from their stupor by the report of the muskets over their grave.'

Public rumour, at the time, accused Lamothe of having committed murder; but it does not seem that it ever reached the ear of the public authorities.

Three years afterwards, the house adjoining to that of Lamothe took fire; and the inhabitants of the village, having never forgotten the tale of Madame Chevalier's death, did not hesitate to accuse her (Lamothe) now of wilful arson.

The magistrates, hearing of these reports, determined to investigate the matter minutely. It was ascertained that Lamothe had some arsenic in her possession at the time of Madame Chevalier's death. They ordered the body to be immediately disinterred—three years exactly having intervened since the period of her death.

The soil of the burying-ground being remarkably dry, the body was found not so much decomposed, as might have been expected. It was forthwith sent off to Paris, to be examined, pathologically and chemically, by Drs. Barruel, Henry, and Olivier—three distinguished men of science in the metropolis. On examining the trunk, it was found completely dry, mummyfied, and almost inodorous; the abdominal parietes, although much shrivelled, were entire. On removing these, there seemed to be no vestiges of the viscera, in consequence of the extreme desiccation, which had taken place. On examining however the parts more attentively, the intestines were found to be reduced to the state of mere membranous laminæ, adhering to each other, and to the spine and edges of the pelvis. In the interstices of these membranous *folia*, a brownish coloured pulverulent matter was observed. All the viscera, parenchymatous such as the liver and spleen, as well as the fleshy and membranous as the uterus and intestines, had become blended together, just as now described.

At one spot only, on the upper two lumbar vertebræ, there was a small portion of a brown substance, waxy in consistence, which was probably a portion of the liver. After these short details, it is unnecessary to add that it was not possible to distinguish the abdominal viscera, one from another.

A small fragment of the diaphragm, on the right side, still remained. The only vestige of the lungs was a brown friable substance in irregular nodules; and the heart was converted into a hard black and fragile mass, resting on the vertebræ.

The entire contents of the abdominal cavity—if such it can be called—were now carefully scraped from the bones of the spine and pelvis, and collected together, the earthy granular matter being separated from the foliaceous or membranous substance.

The earthy matter was first examined. A portion was boiled in distilled water, acidulated with a small quantity of pure hydrochloric acid.

On cooling, the liquor was filtered. A small quantity of brown deposit was collected on the blotting-paper, and the filtered liquor was of the same color.

Through a portion of this latter, diluted with water, a stream of pure sulphuretted hydrogen gas was caused to pass for the space of two hours. This gave rise to a light brownish precipitate, which was carefully collected and tested. It gave no traces of any metallic sulphuret, and was found to contain nothing but minute portions of chloruret of sodium, phosphate of lime, and oxyde of iron —the usual salts of animal substances.

The deposit on the filtering paper was then dried and calcined in a crucible; the residue was then examined, and found to contain only the salts now mentioned, and to give no signs of metallic sulphuret. Hitherto therefore nothing had been detected to lead to any suspicion of poisoning.

The shrivelled vicera were now subjected to a most careful examination. They were first macerated in rectified alcohol for forty-eight hours, and then withdrawn. The spirit, which had acquired a greenish brown colour, was filtered and distilled in a glass retort. The residue was concentrated in a water-bath to the consistence of a soft extract, and then treated with slightly acidulated water and boiled. Ammonia was added to neutralise the acid; and then a stream of

sulphuretted hydrogen was passed through the fluid for a length of time. A deep-brown precipitate was formed in consequence. This was carefully collected on filtering paper; and the strained liquor was evaporated to dryness, until a dark brown residue was obtained. On burning a small portion of this on live coals, an empyreumatic animal odour, followed by one resembling garlic, was perceived.

Another portion was then heated strongly with hydrochloric acid, until all the brown matter had disappeared; and the dry product of this treatment, being first neutralized, gave a bright-red precipitate with nitrate of silver, similar to that afforded by the action of this salt on any of the preparations of arsenic.

There were therefore strong suspicions that arsenic would be discovered in the precipitated matter collected on the filter.

It is unnecessary to particularise the experiments, both in the *dry*, and in the *wet* method, which were performed. Suffice it to say that they proved, beyond all doubt, the existence of this poison. The Commissioners sent to the public authorities, along with their report, specimens of—1, arsenic reduced to a metallic state; 2, arseniate of silver; and 3, sulphuret of arsenic floating in water.

The Court of Assizes at once pronounced judgment against the woman Lamothe, and condemned her to perpetual imprisonment. This took place on the 17th of March 1837—three years and a half after the death of Madame Chevalier.

In closing this brief report, it only remains to add that the experiments necessary in such a case, as the preceding, require the most patient and protracted care and delicacy. A week, at least, is not too long for such an investigation.—*Annales d'Hygiene, &c.*

CASE OF TORTICOLLIS, OR WRY-NECK, TREATED BY DIVISION OF THE STERNO-MASTOID MUSCLE.

Dr. Jules Guerin, the author of the following observations, premises them with remarking: Whenever a novel idea is started, it is almost sure to encounter three sorts of opposition—the opposition of the learned, who will not suffer that any thing can be invented or discovered in the present day which has not been known before; the opposition of rivals, who claim to participate in what they have the laudable regret not to have done; and lastly, the opposition of those *esprits retardataires*, who resist all progress or advance whatsoever.

These three sorts of opposition have all been exhibited against those views on the treatment of wry-neck, which I have recently published. It may therefore be useful to report a few cases from my own practice, as well as from that of other surgeons, in order that medical men may judge for themselves of the soundness of my ideas.

Case 1. The patient, a youth 17 years of age, had been affected with permanent wry-neck since his infancy. Perhaps even it was a congenital malformation; but this point could not be determined in consequence of the want of any exact report.

When admitted into M. Guerin's Orthopedic Institution, the following was his condition.

"The head is bent or inclined to the left side, its vertical axis forming with the angle of the vertebral column an angle of 145°. The face is turned round toward the right side, so that the left angle of the lower jaw is in a line with the sternum, and the chin with the sternal end of the right clavicle.

On examining the left sterno-mastoid muscle, it is found to be—especially the sterno-mastoid portion—tense, contracted, very hard, and prominent.

The whole left side of the face is more or less deformed or irregular; the left eyelids being drawn in towards the nose, and the tip of the nose and the left

half of the lips downwards and to the left side. The cervicle column has a very marked leaning to the right side, and the left shoulder is higher than its fellow. The chest too exhibits several irregularities in its symmetry."

Treatment.—Various methods of extension having been tried during several months without avail, M. Guerin resolved on performing the section of the contracted muscle, about eight lines or so above the sternum.

It was performed on the 2nd of December, 1837, in presence of Messrs. Lisfranc, Macloughlin, Bruni of Florence, Thompson of Edinburgh, and others.

A knife, slightly concave on its cutting edge, was passed under the fold of the integuments, which had been pinched up, and between them and the contracted muscle; and being then gently turned round, it (the muscle,) was divided without any difficulty. A distinct cracking noise was heard at the moment, and at the same time also a noisy blowing sound from the air rushing in to fill the vacuum between the divided ends of the muscle. It is well to be aware of the possibility of such a phenomenon, as a surgeon might be apprehensive of a much more serious accident—that of the introduction of air into a divided vein.

A few hours after the operation, M. Guerin, finding that there was still some resistance to the *redressement* of the head, and ascertaining, by the touch, that the sheath of the muscle had not been sufficiently divided, introduced a bistoury again, and made the necessary section.

The extension was not commenced till the second day after the operation.

By the eleventh day the head seemed to be *entierement redressée:* the mechanical treatment was, however, continued for six weeks more. By this time, *tous les elemens du Torticollis avaient disparus.*

Case 2. M. Bray, 22 years of age, became affected with wry-neck when an infant, after an attack of convulsions. The head was inclined over to the right side, and the deformity became greater and greater, as the child grew. When admitted into La Pitie Hospital under the care of M. Lisfranc, the following was the condition of this patient.

"The head is so much inclined over to the right side, that its axis forms an angle of 135° with the axis of the body: the face is turned round to the left side, so that its anterior plane cuts that of the trunk at an angle of 45°, and a vertical line from the right commissure of the lips corresponds with the median line of the sternum: the right shoulder is higher by about two inches than the left one.

The right sterno-mastoid muscle is contracted, as hard as a piece of wood, projecting under the skin, and wholly inextensible.

The whole right side of the face is somewhat irregular and deformed."

The operation of dividing the contracted muscle was performed in the amphitheatre of La Pitie Hospital in presence of MM. Lisfranc, Piorry, Pinel, Grandchamp, and many pupils. It was quickly done by inserting the bistoury between the integuments and the muscle, and then gently turning it round, and dividing the latter. A distinct cracking noise was heard at the moment of division.

Immediately after the operation, the head could be *redressée*, and turned round in various directions quite freely. On the third day, the use of the mechanical permanent extension was commenced.

By the end of a month, the *redressement* was complete; and ultimately the free movements of the neck were completely restored.

Case 3. This case occurred in a young girl, the contraction having existed for seven or eight years. The operation of dividing the affected muscle was performed by Dupuytren in 1822. It would seem however, from the report of the case, that the deformity, although very much diminished, was not entirely removed.

Case 4, is reported by M. Stromeyer in his treatise, Ueber Paralyse der Inspirations Muskeln, 1826, and occurred in a child eight years of age. The affection was of three year's standing. M. Stromeyer, having introduced a bistoury through a fold of the integuments, and then turned it somewhat round, divided both portions, the sternal as well as the clavicular, of the muscle: a distinct cracking noise was heard at the time. The operation was crowned with success.

Case 5. Differed considerably from the preceding cases in several particulars. The affection of the muscle seems to have been merely spasmodic, and moreover to have been intermittent and not permanent. Various means having however been ineffectually tried to relieve the disease, M. Stromeyer determined to divide the *sternal* portion of the muscle. The operation was followed by very great relief for some time; but the severe sufferings of the patient having returned from a renewal of the spasmodic contractions of the muscle, the *clavicular* portion also was divided. For some months the patient continued free from her complaint. The spasms of the neck once more however recurred; and now it was discovered that they were seated in the clavicular portion of the trapezius muscle. A third operation was therefore performed for the purpose of cutting the contracted fibres across. From this period the disease was completely cured, and the patient was enabled *frequenter le monde et le spectacle.**

Case 6. Occurred in the practice of Mr. Syme of Edinburgh, and is reported in the Edinburgh Medical and Surgical Journal for April, 1833. The disease, wry-neck, had lasted for upwards of a year, and had resisted the repeated application of blisters and the employment of various other remedies. The contracted muscle was therefore divided; and it may be sufficient to state that the cure was speedy and complete.—*Gazette Medicale de Paris.*

FISTULA OF THE CORPUS SPONGIOSUM URETHRÆ TREATED BY SUTURE.

The patient had been annoyed with a urinary fistula for a long time, when he was admitted by M. Ricord into the Hôpital des Veneriens, to be operated on after the method proposed by M. Dieffenbach of Berlin.

This method consists in simply passing a needle armed with a silk thread or two through the skin—not more deeply—on each side of the fistular opening, and tying the ends of the threads over a small cylinder of sparadrap or of bougie. A catheter should be first introduced into the bladder, and it should be allowed to remain there for a few days, in order to prevent the urine from pressing along the urethra, and interfering with the process of cicatrisation.

On the following day the parts surrounding the sore were swollen and tender;

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* Before dismissing this case, the report of which, although very brief, sufficiently explains its leading features—we cannot avoid saying that the treatment appears to us to have been unnecessarily *operative* We are well aware how difficult, nay, sometimes how impossible it is to judge of the propriety of treatment in any particular case, unless we have seen and examined the patient.

To resort however to the section of muscles, which may be affected with convulsive contractions, must always be considered a very harsh resource. We particularly recommend to our readers the perusal of a very valuable paper by M. Recamier—a summary of which will be found in the number of this Review for July last—on "The Efficacy of Extension, Shampooing, and Percussion in Muscular Contractions." *Rev.*

and next day the ligature had given way. Although the catheter was retained constantly in the urethra, the edges of the fistula were always moist with urine. A free suppuration from the ulcerated edges was established, a tendency to granulation and to coalescence was perceived, and there was less and less oozing of the urine. M. Ricord was quite gratified with the progress of the case, and expressed his hopes that the cicatrization not only of the skin but of the spongy texture of the urethra was nearly completed.

Unfortunately a few days after this period a fresh attack of inflammation in the part came on; an abscess formed, and the fistula was re-established. M. Ricord attributed this *contre-temps* to the awkward attempts of the patient in trying to introduce the catheter for himself.

(The report of the case ends here).—*La Lançette Française.*

It must always be a difficult thing to induce the healing of urethral fistulæ. The spongy body of the urethra does not readily take on the adhesive inflammation, and the tendency to healing will be much counteracted by the oozing of the urine, in spite of the constant use of the catheter.

CASE OF HYDATIDIC GOITRE, OR HYDROCELE OF THE NECK, SUCCESSFULLY TREATED BY OPERATION.

Jean Peretti, 50 years of age, had perceived some years ago a small tumor on the right side of the larynx, it gradually became larger and larger, until at length it acquired a very considerable size. The compression which it made on the jugular vein had caused an attack of apoplexy; and moreover the deglutition and the speech also were frequently a good deal embarrassed.

The case having been regarded as one of goitre, had been treated with iodine, burnt sponge, &c.; but without success. The continued and rapid enlargement of the swelling at length occasioned a rupture of one of the subcutaneous veins of the neck, and this was followed by an extensive ecchymosis. At this period the patient consulted Signor Petrali. He found that the tumor occupied the entire right side of the neck from the lower jaw to the clavicle. Anteriorly it exhibited a bilobular appearance, and it felt soft and fluctuating under the finger. M. Petrali, after a minute examination, gave it as his opinion that the tumor was a hydrocele of the neck, and he therefore advised the patient to submit to an operation.

An incision was made along the vertical axis of the tumor, by which the skin, cellular substance, and *platysma myoides* were divided. The cyst was thus fairly exposed; its parietes were shining and tendinous-looking. The fluctuation of fluid within being quite distinct, the cyst was freely opened; a large quantity of a yellow, limpid, and inodorous fluid escaped.

The lower or depending part of the cyst was now found to form a cul-de-sac, which extended downwards under the clavicle. A sort of transverse septum or diaphragm, formed by a fold of the parietes, was observed at this part of the sac: the septum being pulsatile, Signor Petrali at first suspected that it might be the subclavian artery partially displaced; but he soon satisfied himself that this was not the case, and he therefore completed the incision of the parietes of the cyst without any interruption.

The hæmorrhage having been arrested, the cavity was filled with lint, and the edges of the wound were then approximated.

On the fourth day after the operation, while dressing the wound, the surgeon observed at its upper and anterior corner a part of another tumor, which, although not fluctuating, he considered to be of the same nature as the one which had been opened. It was in a great measure concealed by the *sterno-mastoid*

muscles, from under which it projected forwards, on a level with the *os hyoides*. It was strongly pulsatile; but the pulsations were evidently communicated by the carotid artery, which lay adjacent to it. To expose the tumor fairly, it was deemed necessary to divide partially the *sterno-mastoid muscle*; it was then found to extend inwards between the carotid artery, the jugular vein, and the pneumogastric nerve. Having pulled the tumor out, Signor P. plunged a bistoury into it, and gave a discharge to a considerable quantity of fluid, similar to what had escaped from the former one: he then passed a canula into a sac, and, through this, a probe which was armed with a seton.

Some days after the operation, the opening of the seton was dilated, and a large tent was substituted for the skein of thread. The suppuration was abundant, and the wound and the swelling rapidly contracted.

There still remained a bilobed tumor on the front and left side of the neck: it seemed to consist of two cysts. Signor Petrali attacked the anterior one first, by making an incision upon it from the os hyoides to the sternum. The cyst was situated under the sterno-hyoid muscles. When opened, a quantity of limpid, citron-coloured fluid escaped. On this being done, both cysts immediately subsided. The body of the thyroid gland seemed to Signor P. to be quite sound. On the following day, the upper lobe of the cyst was found to be refilled with fluid: a seton was therefore passed through it. The subsequent treatment of the case is thus briefly stated: Dressing as above, continuation of the two setons, the repeated application of caustic. The cyst became gradually obliterated; and ultimately a perfect cure was obtained.

Remarks.—Since the publication of M. Maunoir's memoir on Hydrocele of the neck, surgeons have trusted generally to the use of setons alone in its treatment. In many cases however these have been found to be inefficient; and then the practice which was so boldly and so successfully pursued by Signor Petrali, may be adopted.—*Annali Universali di Medicina.*

LIPOMA OF LARGE SIZE IN THE GROIN SUCCESSFULLY EXTIRPATED.

'A man, 67 years of age, perceived about thirteen years ago, a small indolent and colourless swelling in the left groin. It gradually increased in dimensions, until at length it hung down between his thighs nearly as low as the knees, *comme une enorme queue de mouton de Barbarie*. It was of the shape of a water-sac; its base being large and broad, and its neck narrow and contracted; its surface was lobulated and covered with large veins at different parts; at one point, near its base, was an ulcer which exsuded a quantity of bloody sanious discharge. The generative organs, it would seem, were not involved in the swelling; as it is stated that 'it was moveable in front of them.' The scrotum, inguinal ring, and crural artery being quite independent of it, Signor Malagodi considered the case as one of sarcomatous Lipoma, and he therefore advised its amputation.

He made a free elliptical incision of the integuments over the basis of the tumor, sufficiently low down to save skin enough to make a large flap, by dissecting it upwards. Having very carefully dissected all round the crural arch so as to avoid any unnecessary injury of the blood-vessels and nerves which were exposed, he cut across the pedicle of the mass with a few strokes of the knife. The wound was of very large extent, but the loss of blood was not very great. The edges were brought together and retained in position by several small hare-lip needles. The progress of the case was most satisfactory, the cicatrisation being complete at the end of the fourth week.

Remarks. Patologists have differed a good deal in attempting to explain the

origin of such tumors, as the one noticed in the preceding report. Many have attributed them to an hypertrophy of the adipose tissue of the part, in which they are developed. But this opinion is in some degree invalidated by the consideration, that they are not unfrequently found in parts, where there is normally very little fat. It is therefore more reasonable to regard these growths as the product of a new formation, just in the same way as tubercles, scirrhus, &c. are; being developed in textures with which they have no analogy.—*Il Raccoglitore Medico.*

SURGICAL REPORT OF THE PALERMO HOSPITAL.

1. Fungus Hæmatodes—2. Urinary calculi in the female mistaken for diseased uterus—3. Sudden death soon after an operation, &c.

CASE OF FUNGUS HÆMATODES.

The lecture of Dr. Gorgone upon Encephaloid tissue contains a good report of a case of this formidable growth, attacking the lower part of the thigh. The patient was a man between fifty and sixty years of age. The tumor had, as usual, come on without any evident cause, and when Dr. Gorgone saw it, it occupied the whole of the lower half, and part of the middle of the thigh. It had commenced on the inner, and had extended round to the outer, part of the limb. The real nature of the disease was not suspected at first.

Its hardness and resistance in some parts, especially round its circumference, as well as its elasticity, and the sense of fluctuation (obscure indeed) in other parts, had suggested the idea of its being a chronic abscess.

The skin was not discoloured, nor did pressure cause much pain in the part, although the patient was never altogether exempt from a certain uneasiness in the limb. Frictions with discutient ointments, blisters, and caustics were at first applied to that part of the tumor which was most soft and prominent.

Then three different punctures were made with a trocar: but serum only and blood flowed out; and on introducing a probe into the wound, it was felt to rest on a soft yielding structure.

Dr. Gorgone now suspected the genuine nature of the malady, and proposed amputation of the limb; but the patient refused to submit to it, and he died in the course of a few months. The following faithful description of the appearances of the diseased mass, on dissection, is given in the lecture.

Addressing his pupils, he says, "You see here a quantity of a soft elastic substance, whitish on its surface, arranged in lobules, not unlike, in appearance, to those of the brain, with clefts between these lobules, and these lobules connected together by a cellular tissue, which is soft and in a decayed state. At some points you perceive a soft, pultaceous, nearly fluid substance, of a greenish colour—the usual effect of the softening and incipient putrefaction of parts exposed to the air.

The whole of this encephaloid mass is inclosed in an enveloping sac, which extends from the knee-joint upwards to the middle of the thigh. The adjacent muscles are in several points diseased in structure, being of a dirty yellow colour, and not unlike the liver in consistence. Portions of encephaloid tumor are seen adhering to the *vastus externus*, high up on the outside of the limb. The crural nerve also has become softened, and exhibits a diseased yellow colour at some places. The femoral artery remains unaffected.

2. The following is an interesting case of *vesical calculus*, which had been long mistaken for disease of the uterus.

Donna Carolina Bonomolo, 22 years of age, had been subject for four or five

years to pains in the region of the kidneys, to dysuria, feeling of weight and uneasiness in the perineum, &c. The urine was occasionally loaded with an immense quantity of mucus. As she had miscarried twice, her medical attendant supposed that the uterus had become affected with chronic inflammation, and that the urinary complaint was of sympathetic origin. A variety of remedies had been tried; but all to no effect.

Three years after the commencement of her illness, the patient began to experience sharp pains darting through the bladder; incontinence of urine (which was now mixed with purulent matter), and very decided symptoms of hectic fever.

It was by mere accident that the true nature of the disease was discovered. A total suppression of the urine coming on, it was necessary to pass the catheter, and, then for the first time, the presence of a large calculus in the bladder was ascertained.

At this period the bladder was exquisitely sensitive, so that the gentlest pressure on the hypogastrium caused severe pain. The patient was indeed in a lamentable condition: what, with the almost constant desire to pass the urine, the pains which these efforts occasioned, and the debility and emaciation which the febrile irritation had induced, considerable apprehensions were entertained of her ultimate recovery. It was quite necessary to use some decided means without delay. After the irritation and local distress were somewhat abated by rest in the horizontal posture, the employment of opiate enemata, and of mild oleaginous aperients, Dr. Gorgone extracted by the cutting operation, as recommended by Dubois, four rough calculi, three of which were as large as chesnuts and the other one was of the size of a strawberry. On the evening of the day of the operation, a sharp attack of fever, accompanied with agonising pain in passing the urine and with convulsions and delirium, supervened. The use of warm baths, of emollient enemata, and of leeches to the hypogastrium relieved the unpleasant symptoms. These alarming attacks recurred six times in the course of the ensuing month, and upwards of sixty small calculi, and a quantity of sabulous deposit, were discharged with the urine. The patient was for a length of time distressed with the incontinence of the urine; but this most distressing symptoms gradually abated (dileguavasi mano mano), as she recovered her general health and strength.

3. *Sudden Death soon after an Operation.*—There are two cases of expiration of cancerous mammæ detailed in Dr. Gorgone's report. In one of these, the patient (who had been subject for many years to epileptic fits), sank into an apoplectic state immediately after the excision of the tumor, in consequence of fright, it was supposed, from looking at the wound. Some of the attendants thought that air perhaps had entered into some of the divided blood-vessels; but the phenomena of the case were different from those, which have been described by Dupuytren and others. There was a complete abolition of sensibility and of voluntary power; the breathing was stertorous, and the pulse was full and quickened. Five ounces of blood were drawn from the feet, and stimulants were applied to the nostrils to excite sneezing. The patient began to groan and to move the limbs about; slight convulsive twitches were observed to effect the jaw and eyes, and the breathing became less oppressed. But this appearance of amendment was delusive; for the woman died convulsed 23 hours after the operation. It deserves to be noticed that this patient had been previously affected with attacks somewhat similar to the fatal one. In some of these, she had lain quite insensible for nine or ten hours.

Dr. Gorgone, in reference to the preceding melancholy event, extracts the following passage from Zimmerman's work: "All the passions, when intense, may cause death, or at least induce dangerous disease. The most experienced

physicians agree in admitting that fatal apoplexy may be induced by sudden fright, fear, anger, or any other violent passion or emotion."

It has been remarked by most surgeons that accidents, connected with nervous disturbance, are more frequently observed after operations in those patients, who have smothered and disguised their sufferings at the time, than in those who have given the natural relief to their pain by cries and lamentations. Dr. Gorgone alludes to several cases, were symptoms of trismus, tetanus, or of epilepsy accompanied, or not, with delirium or stupor, came on very soon after different operations.

The mere introduction of a catheter into the bladder, has been known to induce general covulsions; and our author reports a case, where a fit of apoplexy followed immediately upon the operation of depressing a cataract.

Surgeons ought therefore to be aware of the possibility of such accidents, and that they are much more apt to occur in patients who may have been previously subject to epilepsy, or other diseases of the nervous system.

ON THE APPLICATION OF RAW COTTON TO ERYSIPELATOUS SURFACES.

M. Reynaud, chief surgeon of the French marine, and professor of clinical surgery, has published a long paper in a late number of the Journal des Connoissances Medico-Chirugicales, on the good effects of applying raw cotton to erysipelatous surfaces. He was led to try it in such cases, from its acknowledged utility in many examples of burns; all the forms of which—from a simple scalding of the surface to a complete adustion of the enteguments,—M. Reynaud has for a number of years treated with covering the parts with cotton. In the milder form of the accident, the cotton often soothes almost instantaneously the severe pain, and thus mitigates or checks the febrile excitement which is so apt to ensue; while in the more severe cases, although it does not prevent the suppuration and sphacelation, these processes usually go on more quickly and more favourably under its application. If the remedy is so decidedly useful in burns, we cannot be suprised at its utility in erysipelas. The burning, stinging pain of the disease, we are informed, very speedily abates, the surface becomes moist and perspirable, the swelling and redness diminish, and the skin recovers its healthy pliancy and softness, with little or no subsequent desquamation of its cuticle. The constitutional symptoms of erysipelas being always in a great measure proportionate to the severity of the local distress, they are necessarily much mitigated, and all the functions quickly resume their normal rhythm. M. Reynaud informs us that he has succesfully used the cotton medication in all the various forms of erysipelas, idiopathic and traumatic, without regard to the seat or duration of the disease.

The modus operandi of this remedy is, according to him, by promoting a free exhalation from the surface, and by confining the moist and warm atmosphere, thus induced, around the inflamed surface. A steady and uniform temperature is thereby maintained, and the contact of the air and light—two potent stimulants of the skin—is prevented. The cotton application alone is not sufficient however, it must be admitted, in all cases of burns; nor ought it to supersede the use of other local remedies, when these are deemed proper.

When used, it ought to be well carded, and freed from all roughness or foreign bodies. The affected part should be enveloped in a moderately thick cushion of it, a roller should be then passed loosely around, to confine it in contact with the skin.

Fourteen cases are narrated by M. Reynaud; in proof of the efficacy of the cotton application In four of these the erysipelas affected the face. The constitutional treatment consisted in the use of blood-depletions, of purgatives and

refrigerant diuretics. The cotton was applied to the inflamed parts and kept in its place by the night-cap and by handkerchiefs. All the patients recovered. It is proper to observe, that none of these four cases appear to have been severe. In the remaining ten cases, the erysipelas affected the lower extremities.—*Gazette Medicale.*

There can be no objection to the use of cotton, and other such expedients, in the local treatment of erysipelas For our own part we are inclined to prefer the use of simple tepid fomentations, constantly applied, to any other topical remedies in this disease. The best way of managing then, is to surround the limb with linen, dipped in warm water or poppy decoction, and then to confine this with an envelope of oil-silk. We have thus all the benefit of a constant and gentle vapour-bath around the inflamed parts.—(*Rev*).

THE PELLICLE OF AN EGG, AN EXCELLENT ADHESIVE APPLICATION TO WOUNDS.

The following letter from M. Cloquet, we find in a late number of the Bulletin Medical Belge.

"To the Editor,

When reading a notice by Dr. Heusner, in Caspar's Wochenscrift, of the employment of the pellicle of an egg as an application to recent wounds, I was reminded of an interesting anecdote, told me by a veteran soldier of Napoleon.

It was at the siege of Saragossa, when the town had been given up to pillage, and the only inhabitants, that remained, were concealed in cellars or haylofts. No quarter was shewn to any one; men, women, and children were butchered without mercy.

The soldier, my informant, was not more compassionate than his comrades. He was, however, moved with pity at the sight of a poor infant, which he found lying under its cradle, and which must have fallen a sacrifice, had he not interposed. He took it up in his arms, and was conveying it away to some place of safety, when he received a sabre cut across the face, which nearly severed his nose. The flap hung down upon his upper lip, and the wound bled very profusely.

Fortunately a chemist's shop was near; he went in, and the *pharmacien* treated him with the greatest kindness—'Oh! he was no Spaniard,' repeated the old invalid, over and over again, 'for *he* would have poisoned us.—The wound was cleaned, and the detached flap of his nose was brought together: when the bleeding had ceased, he took an egg and broke it, and then separating the pellicle of the shell, he spread this over the nose (en coiffa le nez du soldat.)

At this time the drums beat to quarters; off, therefore, he had to be on the moment; and from that time to the end of the Spanish campaign, I forgot, said the old man, all about my nose; and at length when I looked at myself in a glass, 'j'etais encore joli gaçron.' The scar that still remained shewed that the wound had been a deep and severe one.

Since I was told this story, I have repeatedly made use of the simple remedy alluded to; and, on more occasions, than one, I have had to thank the old soldier for the useful hint he gave me."

DIFFUSE INFLAMMATION OF THE SCALP, IN WHICH A LARGE EXTENT OF THE CRANIUM EXFOLIATED, AND THE PATIENT RECOVERED.

Diffuse inflammation of the scalp—unfortunately not an unfrequent attendant upon even slight wound and injuries—is one of the most serious diseases which

the surgeon is called upon to treat. It may prove fatal at different periods of its progress. In some cases, death ensues during the acute stage, in consequence of suppurative meningitis: the patient dies comatose or hemiplegic. On dissection, the dura mater is found detached from the cranium, and bedewed or bathed with pus. The pus is either collected at one spot, or diffused between the meninges. In such cases, pus in large quantity may also be found under the scalp, or between the pericranium and bone.

At other times, the patient sinks, at a late period, from the absorption of purulent matter into the system. The violence of the early stage having passed over, numerous abscesses form under the pericranium, and the pus diffuses itself extensively under this membrane The openings, either spontaneous or made with the knife, give vent to the pus, and with it are mixed shreds of dead cellular and aponeurotic tissue; and the cranium is found bare at several points. Acute symptoms again make their appearance; the fever of purulent obsorption is lighted up; the pus from the wounds becomes vitiated; and the patient dies, with all the symptoms that indicate visceral abscesses.

In a third set of cases, the patient perishes from external hæmorrhage.

Some of the considerable branches of the temporal or occipital arteries become ulcerated, and the loss of blood may prove suddenly fatal.

A case of this sort occurred in the ward of Hôtel Dieu, in 1830.

Lastly, the case is sometimes very tedious, and does not prove fatal for a long period after the subsidence of the acute symptoms.

The outer table of the skull, having been deprived of its nutritious envelope, dies, and Nature attempts to throw off the dead bone; but the strength of the patient generally sinks before this slow process can be effected. Sometimes, indeed, we meet with a fortunate exception to this remark. The following is a rare example of this nature.

A young man was admitted into the Hôtel Dieu, with a small wound on the head. He was seized with diffuse inflammation of the scalp The acute symptoms having subsided under a most active antiphlogistic treatment (venesection and the use of large doses of tartar-emetic,) suppuration set in: incisions were made at different points to discharge the matter and the sloughing shreds of cellular membrane. The whole of the external table (tonte le table externe) of the cranium became necrosed (!) It was necessary from time to time to make numerous incisions to extract the different portions of detached bone. After six months of this 'travail eliminatoire,' the patient was discharged cured.

Dupuytren found that the different sequelæ, when put together, equalled in extent the whole convex surface of the cranium. (!)

The treatment of this formidable affection—diffuse inflammation of the scalp—is well understood in the present day, although the surgeon is often disappointed of success. In general it is necessary to adopt vigorous antiphlogistic measures at first. The use of the tartar-emetic, as recommended by Dessault, ought never to be neglected. But constitutional remedies alone will not do. One or more free incisions through the entire thickness of the scalp, and fairly down to the bone, must be practised.

When suppuration is established, Larrey advises that the wounds be dressed with compresses wetted with camphorated vinegar.—*Bulletin de Therapeutique.*

ENCYSTED TUMORS—SEROUS, ATHEROMATOUS AND MELICERIC—TREATED BY INCISION AND INJECTIONS.

Case. 1. A young, child who had long been troubled with an impetiginous eruption on the scalp, had a soft movable tumor, as big as a walnut, situated in front of the larynx. It had been as large as a hen's egg, before it was lanced. The

contents were a limpid serosity mixed with a little blood. Eight days after the incision, the cyst had refilled, and it was again punctured.

An attack of erysipelas then came on, and, for a fortnight, an oozing of pus took place from the wound. When the erysipelas subsided, all the loose cellular tissue in front of the neck became infiltrated so as to form 'un poche volumineuse.' Several acupunctures were made; but the sac, in two days after it was emptied, was found to be more filled than ever.

When M. Magistel saw the patient first, the swelling was as large as an ostrich's egg, and extended over all the fore part of the neck. He made an incision of about an inch in length, and discharged two glassfuls of a serous fluid, mixed with flakes of albumen and striæ of blood. For the following two days, an oozing of a similar fluid continued: the lips of the wound were kept apart by pieces of lint. On the third day, M. M. injected some warm 'vin aromatique miellé' into the sac, and kept compresses, wet with the same, on the swelling, by means of a bandage passed round the neck. The sac became somewhat painful and inflamed, and the patient was feverish for the next twenty-four hours. When these symptoms subsided, the injection was repeated daily for about a week. The lips of the wound were touched occasionally with the nitrate of silver. The cure was complete in about a month from the date of M. M.'s first visit.

Case 2. A gentleman advanced in life, had been annoyed for twenty years with a tumor, seemingly a fatty one, situated in front of the neck. It was of the size of a small egg.

During the last six months, it had become much softer, and the skin over it was thin and purplish. M. M. opened it freely by a vertical incision. A grumous cheesy-looking pus was discharged. The parietes of the cyst were of a reddish colour and exhibited numerous minute projections, like mucous follicles. From these there oozed out a liquid, similar to the contents of the sac. In a day or two, M. M. had recourse to an injection, consisting of decoction of cinchona; and compresses, wet with the same, were applied over the surface of the swelling, the lips of the wound being prevented from closing. This mode of treatment was continued for a fortnight. The wound then healed, and the cure was completed in about a month.

Case 3. An eminent physician had, for a number of years, a small wen on the left temple. It began to increase in size and to become soft; and when M. M. saw it, it was as large as a hen's egg. Most of his surgical friends advised him to have it excised; but, professional-like, he did not approve of this summary mode of treatment. He consented, however, that M. M. should lay it freely open. The contents were "un pus melicerique." The injections, which were first used, consisted of "eau miellée," and afterwards of decoction of cinchona. On the fourth day, M. M. extracted with the forceps a tough, whitish, fibrinous membrane, which was no doubt a portion of the cyst. The wound required to be occasionally touched with the nitrate of silver In three weeks from the time of the operation the cure was complete.—*Gazette Medicale.*

In reference to these cases, we have only to remark that, when the sac of an encysted tumor can easily be removed, the surgeon should always do so. It is useful, however, to know that the cure may frequently be effected by the free incision of the swelling, and the evacuation of its contents; for, in some instances, the sac adheres with great firmness to the surrounding integuments, and is not readily dissected from them.—(*Rev.*)

CASE OF ILEUS, IN WHICH GASTROTOMY WAS PERFORMED.—DEATH.

Annette Rondot—25 years of age, stout and healthy, with the exception of occasional bilious attacks, which were always accompanied with most severe colic in the epigastrium—was in the month of March last seized, after one of her usual ailments, with acute pain in the right iliac region. This was attended with diarrhœa. Three days subsequently, a large hard swelling made its appearance in the suffering part. For two months the diarrhœa continued, with only occasional remissions, and alternating every now and then with fits of vomiting. The symptoms seemed to be always aggravated soon after eating, and also whenever the bowels were constipated. In the second week of May, she was admitted into the Hospital Cochin at Paris. The swelling, occupying the ileo-cæcal region, was firm and hard, but not very sensitive on pressure. Leeches were applied freely both to the swelling itself and also to the anus, but without any decided benefit. An obstinate constipation now came on; and this was accompanied with vomiting at first of bilious, and subsequently of distinctly fæcal matters. Fortunately, after all other means had failed, a pill of croton oil succeeded in acting upon the bowels: the symptoms which had been very alarming very quickly mitigated, and the swelling considerably subsided.

But the relief was only temporary; for, on the following week, the constipation, fæcal vomiting, hiccup, &c. returned; and these symptoms now resisted the use of croton oil, as well as of every other remedy that could be devised.

The state of the patient became so alarming, that M. Monoid, one of the surgeons of the hospital, recommended that the operation of gastrotomy should be immediately performed.

An incision through the integuments and the layers of the abdominal muscles having been made over the tumor, and the peritoneum cautiously divided, a portion of intestine, which proved to be *colon*, protruded: this was immediately replaced by the operator, and, inserting his finger into the wound, he drew down gently a loop of the small intestine, which was red and tumefied, and made an opening into it with scissors to the extent of an inch and a half, or so. A quantity of fæcal matter flowed out, and the patient confessed that she found great relief. A ligature was passed through the mesentery of the divided intestine, and retained at the edge of the wound by means of strips of adhesive plaster: light dressings were applied, and the patient put to bed

On the following day, the loop of the intestine was found to have retracted inwards; but it was easily found, and was then fixed more securely than before, by means of two sutures. The condition of the patient became rapidly worse, and she died on the evening of this day.

Dissection. On opening the abdominal cavity, some sero-purulent fluid flowed out; the convolutions of the intestines in the pelvis were coated with semi-concrete pus, and were redder than the other portions of the canal. The intestine, which had been opened in the operation, proved to be the *ileum*, eight or nine inches above the *caput coli;* a very trifling adhesion had taken place at the seat of the artificial anus. On examining the intestinal canal for the purpose of discovering where the obstruction had been seated, it was found to be at the point of junction of the *cæcum* with the ascending *colon:* the contraction of the tube was so considerable, that the point of the little finger could scarcely be passed through it. The *cæcum* rested posteriorly on an indurated mass of scirrhous-like formation; but the mucous coat of the gut was not injured. The other portions of the intestinal canal exhibited no marks of disease, with the exception of patches, here and there, of redness.—*Archives Générales.*

Remark.—The propriety of resorting to gastrotomy in such cases as the preceding, appears to us to be more than doubtful: "il vaut mieux abandonner à la Providence des malades aussi desesperés."—*Rev.*

Case of Chronic Abscess in the Left Iliac Fossa bursting into the Intestine—Cure. Remarks on Pelvic Abscesses.

M. Bricheteau, one of the most enlightened physicians of the French metropolis, has reported an example of pelvic abscess, which recently occurred in his practice at the Hospital Necker.

A young woman, of a scrofulous habit of body, had for a length of time been subject to frequent attacks of excruciating pain in the left lower extremity, from the hip downwards; these were believed to be of a neuralgic character. No means, that had been used, had succeeded in procuring for her more than only temporary and occasional relief. When the case appeared almost hopeless, an unexpected cessation of the sufferings took place, immediately after a diarrhœa, which came on spontaneously. It was now found that a considerable quantity of pus, mixed with blood, was discharged with the alvine evacuations. M. Bricheteau, in consequence of this, began to suspect than an abscess might probably have been formed in the left iliac fossa, where a sense of pain and uneasiness had been felt, and had suddenly burst into the colon or rectum; and thus that the pressure upon the crural nerves, to which the neuralgic pain may have been owing, was removed.

The relief to all the symptoms, which had so long distressed the poor patient, was most gratifying: her sleep and appetite returned, the purulent discharge by the anus gradually ceased, and in the course of a few weeks the patient appeared to have quite recovered.

Remarks.—M. Bricheteau is of opinion that there can be little doubt that, the present case was an example of those slow-forming abscesses in the iliac fossæ—most frequently however the right one—which are almost always accompanied with very obscure and perplexing symptoms at first, and the nature of which is often not discovered until they burst into some portion of the lower gut, and their contents are thus discharged *per anum*.

The history of such abscesses was first clearly examined by M. Dupuytren, and an excellent account of his researches was published by the late M. Dance in the Repertoire Anatomique of M. Breschet for 1827. The sixth, seventh, and eighth cases, reported in this memoir, are examples of abscesses in the right iliac fossa, which terminated fortunately after the evacuation of their contents by the bowels. In the fourteenth case, the abscess—apparently the result of difficult parturition—was seated in the left iliac fossa: the purulent matter made a way for itself outwardly through the neck of the uterus. In the fifteenth case also, the abscess was on the left side, and the matter had escaped into the bladder and was discharged with the urine. All these five cases did well.

We have already stated that these pelvic abscesses are formed more frequently in the right than in the left iliac fossa. Dupuytren accounted for this by the circumstance of the situation of the *cæcum* on the *former side*, and the local irritation which may be supposed to be frequently occasioned by the lodgment of hardened fæces in this portion of the intestines. It is also to be noticed that the *cæcum* is not covered by the peritoneum on its posterior surface, but is attached to the pelvis by loose cellular substance. It is in this loose tissue that suppuration always takes place most readily. On the other hand, the sigmoid flexure of the colon is invested with a peritoneal covering all round; hence, when an abscess is formed on the left side of the pelvis, the matter—not making its escape into the bowel so readily—often works its way downwards, and is discharged either under the crural arch, or perhaps at the inguinal aperture.

Before closing these remarks, we may mention that a case, in almost all respects similar to the one reported by M. Bricheteau, occurred lately to M. Berard: It had been long mistaken for an example of idiopathic coxalgia, and its true

nature was not discovered, until the discharge of purulent matter took place from the rectum.

In addition to the memoir of M. Dance, already referred to, the *Lecons Orales* of Dupuytren may be consulted with advantage.—*Archives Générales.*

ON THE MOST FREQUENT CAUSES OF SUDDEN DEATH. By M. DEVERGIE.

It has long been, and still is, a prevalent idea, that by far the most frequent cause of sudden death is apoplexy—that form of it to which the French writers apply the term *foudroyante.*

The Statistical Report, made each year to the Prefecture of the Police in Paris usually attributes four fifth of the sudden deaths in that city to this disease.

M. Devergie having, for several years, had the medical direction of the Morgue, (an establishment to which the bodies of those who have died suddenly are carried,) has had his attention directed in an especial manner to this important point of pathology; and the following abstract of his researches will, therefore, be read with no inconsiderable interest.

He premises, by remarking that it is only in a few cases that the real or material cause of a sudden death can be predicted from the symptoms, which may have preceded and accompanied the fatal event: and, therefore, that unless a dissection of the body is performed, there must always be a greater or less degree of ambiguity.

The immediate cause of sudden death may be situated—as was first well explained by Bichat—either in the brain, or in the heart, or in the lungs. Perhaps, however, in most cases, two of these vital organs are usually affected at the same time. Thus sudden death, from an affection of the brain alone, is of rare occurrence: the lungs are, in most cases, simultaneously implicated.

Out of forty instances of sudden death, examined by M. Devergie, in four only was the immediate cause, it would seem, of the catastrophe seated in the brain *alone;* in three, the brain and spinal-marrow were congested; and in twelve, the lungs and brain had been affected simultaneously.

Sudden deaths, from disease of the lungs alone, are of more frequent occurrence. Out of the forty cases, there were twelve belonging to this category; and if to these we add the other twelve, in which the brain was affected at the same time with the lungs, we see that in twenty-four out of forty cases of sudden death, the lungs were more or less immediately the seat of the fatal mischief.

Sudden death from cessation of the heart's action, or syncope, is the most rare form of all: M. Devergie met with three cases only out of forty.

The remaining cases—to complete the number of forty—were examples of hæmorrhage, either from the heart, or large blood-vessels, or from the stomach.

From these statements, we may infer that the relative frequency, in respect to the vital organ primarily affected, of sudden death is attributable—

1. To the lungs;
2. To the lungs and brain conjointly;
3. To the brain and spinal marrow conjointly;
4. To the brain alone;
5. To hæmorrhage, whether the blood be discharged outwardly, or be effused into an inward cavity;
6. To the heart.

M. Devergie proceeds to observe that sudden death is very rarely occasioned by local lesion of any of the vital viscera, when this lesion is of very limited extent. Almost always, one of these organs is affected *dans tout son ensemble;* or two, or all, of them are simultaneously implicated.

He regards the current opinion that apoplexy—that is, a circumscribed cere-

bral hæmorrhage—is the most frequent cause of sudden deaths as entirely erroneous: for in *one* only out of the *forty* cases, all of which he examined with much care, did he discover *un seul foyer appoplectique*; and, even in this case, the lateral ventricles contained a considerable quantity of serum. M. Devergie is of opinion that, in almost all cases of sudden death from cerebral apoplexy, the congestion is not confined to one spot, but is exercised over a considerable extent of the brain. He relates the following case in confirmation of his views.

A woman was seized with the pains of labour; the uterine contractions were soon accompanied with very troublesome fits of vomiting. At the end of four hours she expired. On dissection it was found that a hæmorrhage had taken place from a blood-vessel adjoining to the left lateral ventricle of the brain, and that the blood had gradually filled the four cerebral ventricles to complete distention.

The common idea, that sudden death is often occasioned by a very limited or circumscribed local lesion, has arisen from pathologists being apt to examine the organs separately and by themselves, and not in connexion with each other. Hence the great importance of the anatomist making a general inspection of the cerebral and thoracic viscera, before he divides or detaches any of them from their natural position.

Each of the three modes of sudden death—according as the brain, the lungs, or the heart, has first ceased to act—leaves certain pathological changes, which to the experienced eye are, in some degree at least, characteristic.

Thus, when the death proceeds from some interruption of the pulmonary functions, the circulation is primarily arrested in the lungs:—hence the pulmonary arteries, the right cavities of the heart, and the venæ cavæ are gorged with blood; while the pulmonary veins, the left cavities of the heart, and the aorta are altogether or nearly empty of blood.

Again; if the death has been owing to a sudden cessation of the brain's influence, the meningeal veins will be found extremely congested, the lungs will be similarly affected, and the cavities of the heart on both sides will probably contain blood, although more certainly may exist in the right than in the left cavities. These pathological phenomena, are just what we might expect, when we call to mind that, in sudden death from a cerebral cause, the lungs are oppressed before the heart ceases to act.

Lastly; If the death has *debuté* from the heart, the cavities of this organ, on both sides, will be found on dissection to contain blood; the veins are not more loaded than the arteries, and neither the lungs nor the brain exhibit the signs of genuine congestion.

It thus appears that it is quite possible to distinguish, or at least to form a probable conjecture of, the three modes of sudden death, provided we examine the state of the brain, lungs, and heart with sufficient care, and without detaching them from their connexions.

Having thus briefly alluded to the leading pathological characters of sudden death—whether it proceeds from syncope, or from pulmonary, or from cerebral, asphyxia—we shall now arrange the forty cases, to which we have already alluded, in a tabular view, so as to exhibit more exactly the nature of the disease which proved fatal.

Apoplexy, with a circumscribed effusion or *foyer* in the tuber annulare	1
Apoplexy, meningeal	3
Apoplexy, serous, and accompanied with pulmonary congestion	2
Congestion, cerebro-rachidian	3
Congestion, pulmonary	12
Congestion, pulmonary and cerebral	12
Hematemesis	2
Syncope	3
Rupture of the heart	1
Rupture of the pulmonary artery	1
	—40

(M. Devergie here enters into a minute anatomical description of the post-mortem phenomena in each of the three sorts of sudden death; but, as we have already alluded to the general pathognomonic characters of these, we deem it unnecessary to do more than recommend our readers to peruse the memoir for themselves.)—*Rev.*

As to the determining causes of sudden death, it is almost impossible to give any satisfactory account of these. One sixth of the bodies, which are brought to the *Morgue* at Paris, is never claimed; and in very many cases of the remaining number no precise information can ever be obtained. In *fourteen* however out of the *forty* M. Devergie satisfied himself that the sudden death was owing to excessive intoxication; which will account for the frequency of pulmonary and cerebral congestion, as a post mortem phenomenon in his researches.

With respect to the age of the deceased, this was ascertained in thirty-five out of the forty cases:—

From	20	to	30	years	2 cases
From	30	to	40	"	7 "
From	40	to	50	"	10 "
From	50	to	60	"	6 "
From	60	to	70	"	8 "
From	70	to	80	"	2 "

As might be expected, the frequency of sudden death among men is very much greater than among women. The ratio in M. Devergie's practice has been about one to eight or nine.

The author sums up his observations in the following propositions:—

1. The most frequent immediate cause of sudden death is pulmonary congestion; either simple, or complicated with cerebral congestion.

2. Sudden death from apoplexy is of much less frequent occurrence than has been generally supposed.

3. In most cases, the sanguineous congestion of any of the three vital organs is usually extensive or diffused, and not confined to a single or very circumscribed spot.

4. Sudden deaths are generally more frequent among men than among women; and the periods of life, at which they are most common, are between 40 and 50, and between 60 and 70 years of age.

5. Sudden deaths are more common in Winter than in Summer.

6. Intemperance is one of the most common exciting causes.—*Annales d'Hygiene, Juillet*, 1838.

Remarks.—The preceding observations of M. Devergie are doubtless quite correct, as far as his own researches have gone; but we strongly suspect that if they were taken as illustrative of the question of sudden death in general, and not only among the lower orders, but also among the higher classes of society—among the latter, be it remembered, the accident is most frequent—many of his conclusions would be found to be erroneous. We are to remember that M. Devergie's data have been derived almost entirely from the examination of the bodies—found in the Seine, and in the streets and suburbs of Paris—at the *Morgue*. It is almost unnecessary to say that by far the greater number of these have been the victims rather of *violent*, than of *sudden*, death. If such be the case, we may at once explain the frequency of pulmonary and cerebral congestion found on dissection, and the rarity of cardiac disease. M. Devergie himself has mentioned intoxication as one of the most common exciting causes of sudden death; and yet we all know that life is very rarely extinguished in less than the space of several hours, from this cause.

We have already stated our opinion that sudden deaths are of more frequent occurrence among the rich than the poor, among men of educated and sensitive feelings than among the humbler classes of the people. We have little doubt

that among the former the heart and brain—more especially the former—are the organs primarily affected in most cases.—*Rev.*

DELIRIUM TREMENS, HISTORY AND TREATMENT OF, WITH EMETICS, BY STOLL, IN 1778.

The ancient writers have confounded under the general term *phrenzy* various affections, which the moderns have discriminated, and which they have sometimes described as new and unnoticed diseases. Among these we may place that bizarre affection, which was well portrayed by the English physician Sutton under the name of *delirium tremens*, and which, he shewed, was in almost every case occasionally by the abuse of spirituous liquors.

In lately perusing the works of Stoll, I (Professor Forget of Strasburg) was much struck with the very exact and faithful delineation of this disease, in the Chapter on the Causes and Seat of Phrenzy.

The report of the following three cases will interest every medical reader, not only by the accuracy of the description, but also by the judicious therapeutical instructions recommended by the author.

Case. 1. A middle-aged man, of a robust constitution, was admitted into the hospital at Vienna on the 13th of June 1778. For six days he had been distressed with extreme lassitude, loss of appetite, frequently-recurring chills, and subsequently with a great trembling or shaking of the body, as if he was in the cold stage of an ague. The pulse was but little affected; the speech was quite clear, and the mind was tranquil. Dr. Stoll regarded the case as one of incipient bilious fever, and prescribed some light aperient to act upon the bowels.

During the night, however the patient was unexpectedly seized with furious delirium; and, from this time until the hour of the morning visit, he was in a constant state of violent excitement, screaming out, and tearing every thing that he could get hold of. The pulse at this time was vibratory; and the surface of the body was covered with a copious sweat.

Three grains of emetic tartar were administered immediately; but neither vomiting nor purging was induced. An hour afterwards a mixture, containing eight grains of the same salt, was prescribed: one half to be taken at a dose, and the other half in half an hour, if no effect was produced. The patient however, mistaking the medicine for wine, which he was continually desiring to have, swallowed nearly the whole of the mixture at once. He was vomited and purged briskly three times; and a copious perspiration broke out. The delirium soon subsided, and he fell asleep muttering to himself. On the following day, he awoke quite conscious, and almost entirely tranquillized in his mind.

Remark. The treatment adopted by Stoll in the preceding case deserves especial notice, as some late writers have claimed to themselves the credit of having first announced the efficacy of emetics in delirium tremens.

Case 2. In the Autumn of 1778, we received into the hospital a man-servant, who was at the time in a state of furious excitement. Four or five days previously he had drunk a large quantity of strong beer, while heated from running; and he was soon afterwards seized with intense headache, and frequently-returning chills. He was immediately bled from the arm; but, although the blood was buffy, *no decided relief was procured.* During the course of the evening, he fell into a state of delirium: his eyes seemed to be pushed forwards, and they were constantly rolling about; he screamed out in violent paroxysms of rage; the whole surface of the body was drenched in profuse perspiration; and the

pulse, though scarcely at all accelerated, was vibratory and jerking. A second venæsection was practised, *but without benefit.*

On the following day, however, he was much more composed, and then Stoll saw him for the first time. He advised a small quantity of blood to be taken again from the arm: it proved to be not at all buffy now. Acidulated drinks and gentle aperients were also prescribed; and, along with these medicines, a four-ounce mixture containing six grains of tartrate of antimony. These means produced three copious stools, and also vomited him freely thrice. He became, soon afterwards, very calm, and at length fell into a profound soothing sleep, which lasted for many hours. In the course of a few days he had completely recovered.

Remark. The inutility of sanguineous depletions was strongly manifested in the preceding case.—(*Rev.*)

Case 3. A young man, who had been long addicted to excess in drinking, was seized with shivering, severe headache, frequent vomiting, and general weakness. At times, all his limbs trembled or shook, as if he was in an ague-fit. The pulse was quickened, hard, and full. He was bled and purged with cooling aperients—the blood was buffy. During the course of the night, however, he fell into a state of delirium and excessive restlessness. On the following day, there were frequent attacks of convulsions; and the delirium was almost constant. Next day he was conveyed to the hospital: he was then more tranquil, and could give some account of his illness.

While engaged however in speaking, his looks and whole demeanour indicated an excited and wavering state of the mind. He had no sooner finished his tale, than he was seized with furious delirium.

Five grains of the tartrate of antimony were given at once, and smaller doses were given at short intervals. After the emetic and purgative action of the medicine was freely induced, the state of the patient became much more composed. Although sleep did not come on for some time, his health gradually improved and was ultimately quite restored.

General Remarks. These three cases, reported by a most experienced physician of the last century, before the term *delirium tremens* had been heard of, will be read with interest and advantage. The efficacy of the antimonial treatment is most satisfactorily proved by the result of each case; and the recommendations of it by some recent writers are thus very beautifully confirmed. We are induced to append the following case, as it was one of extreme severity. It occurred in Dr. Forget's practice.

A healthy robust man, who confessed his propensity to intemperance, was admitted into the Hospital at Strasbourg on the 24th of June, 1837. His whole frame was agitated and shaking; he complained of acute headache, and general restlessness; the pulse was normal, the heat of the surface moderate, the bowels regular, and his ideas seemed to be clear and but little disturbed. He was bled from the arm; but the coagulum was soft and not at all buffy. As the patient said that, some years ago he had had an attack of ague, the present ailment was regarded in the same light; and accordingly quinine was administered. During the course of the night, however, he became vehemently excited, and at length quite ferocious, so as to require the application of a straight jacket.

Next day he was in a constant state of delirium, screaming and shouting out, his whole frame convulsed with a trembling agitation; the eyes sparkled and rolled about incessantly; every now and then, he made violent efforts to disengage himself from the jacket: the pulse however was not much excited, and the skin was moist.

During the visit, he was seized with a most severe epileptiform convulsion; the whole body became stiff and immoveable, the head was thrown back, the face livid, the jaws and fingers clenched and the breathing convulsive. This paroxysm lasted for two or three minutes. Twenty leeches were applied to the temples, and one grain of the extract of opium was ordered to be given every two hours: mustard poultices were applied to the legs. The agitation continued more or less during the whole day: the opiate treatment however was steadily persevered in; and by midnight, when he had already taken nine grains in all, he fell into a deep sleep.

Next day, he was calm, spoke rationally, and had lost all the trembling agitation of his body and limbs—the pulse was eighty, and rather small in volume. This day he took three grains of opium, and had an aperient enema. The quantity of opium was gradually diminished each day; and by the end of the week he was discharged quite recovered.

Remarks. This case is especially interesting in a diagnostic point of view; its characters having successively assumed those of intermittent fever, meningitis, and epilepsy. It will often require great tact to avoid such mistakes; and, on the correctness of a right discrimination, will depend the appropriate management of the disease. The reader will observe *that the paroxysms of delirium tremens are almost always aggravated after venæsection;* whereas they are often cut short, almost immediately, by a full dose of opium. The delirium, which not unfrequently supervenes after a severe accident, such as fractures of the limbs, &c. (this is the *delire traumatique* of Dupuytren, and by him was always treated with opium), is of the same nature essentially as idiopathic *delirium tremens*, and requires the same mode of medication.—*Bulletin General de Therapeutique.*

On the State of Vaccination in various Countries of Europe; Propriety of Re-Vaccination, &c.

The medical reader is well aware that, within the last few years, great attention has been paid in some of the German States to the question, how far vaccination has proved a preservative against the contagion of small-pox. It has been made an object of government enquiry; and the statistical reports, which have been derived not only from military, but also from many civil physicians, now constitute a mass of most valuable documents.

From these it most unquestionably appears, that the small-pox has of late years been progressively on the increase. According to Dr. Heim, of Wurtemburg, the author of an important work on the subject, nearly 180 out of every 1,000, who have been vaccinated have suffered from variolous or varioloid contagion.

The results of re-vaccination also may be appealed to in confirmation of the same fact—the diminution of the protecting influence of the cow-pox.

Out of 44,000 cases of re-vaccination, 20,000 exhibited the *genuine*, and 9,000 the *modified* cow-pox vesicle; and in the remaining 15,000 no effects were produced by the experiment.

The state of the cicatrices on the arms of the re-vaccinated has been examined with particular care. Out of 1.322 persons, who presented normal cicatrices, the re-vaccination *took* in about 65 per cent.; in 25 per cent. it exhibited the modified vesicle; and in 9 per cent. it failed altogether.

Out of 1,134 re-vaccinated persons, in whom the cicatrices on the arms were

incomplete, 18 per cent. exhibited the modified, and all the rest of the genuine cow-pox.*

At the present time, among the German medical men, little or no value is attached to the state of the cicatrices on the arm, as an index of the susceptibility of the system to be affected with re-vaccination. *That this opinion has been the result of observation may be fairly inferred from the circumstance that the early ordonnances, issued by the Prussian government, prescribed the operation to be performed only on such of the soldiers as did not exhibit cicatrices having the characters indicated by Dr. Gregory of London.* In consequence however, of the extension of variolous and varioloid disease among the army, the medical officers have unhesitatingly recommended the universal practice of re-vaccination on all the soldiers without exception.

In conclusion, we may state that the German physicians are of opinion that the vaccine virus has not in reality lost any of its original powers or become deteriorated, by having been transmitted through so many individuals; but rather that its preservative quality against variolous disease is only temporary, and therefore that vaccination ought always to be repeated after the lapse of 10 or of 14 years.†

The increase of variolous and variolpid diseases of late years they attribute not to the *decay* or deterioration of the cow-pox virus, but to the cause we have now mentioned—its protecting power seeming to be limited to a certain time.

Such are the prevailing doctrines of the German physicians; and as the experiments, upon which they are founded, have been made upon a very large scale and under the sanction of the government, they are certainly entitled to great respect.

(We had intended to have described shortly the present state of medical opinion on vaccination, and the questions connected with it, in some other countries of Europe; but this we must reserve to the ensuing number, as the Printer has *ordonné* that—

"Here is our journey's end, here is our butt,
And very sea-mark of our utmost sail."—*Rev.*)

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* These calculations will be found to vary exceedingly in different reports; they are not therefore to be taken as affording any general conclusion. Thus, in one of the reports from the Prussian army, out of 7845 re-vaccinated soldiers, in all of whom the cicatrices on the arm were distinct and normal, 31 per cent. exhibited the genuine, and 29 per cent. the modified cow-pox; whereas in the remaining 40 per cent. the operation failed in producing any effect. The state of the cicatrices cannot perhaps be at all depended upon as affording any means of judging as to the liability of the parties to be affected either with the vaccine, or with the variolous, contagion.

† According to this view, it is not necessary to have recourse to the cow for supplies of fresh lymph. There cannot however be any objection to this; and, as the subject is certainly not determined, it might be wise to renew the virus occasionally—especially as we are told that, during the last five years in Wurtemberg, the pock is known to have appeared on 188 cows *dans toute sa perfection.* —*Rev.*

MISCELLANIES.

RESEARCHES ON SUPPURATION. BY GEORGE GULLIVER, ESQ. ASSISTANT-SURGEON TO THE ROYAL REGIMENT OF HORSE GUARDS.

THE object of this paper is to shew the *Frequent Presence and the Effects of pus in the Blood, in Diseases attended by Inflammation and Suppuration.* The paper was read before the Royal Society on the 14th of June, 1838, and is contained in the Philosophical Magazine for September last.

As Mr. Gulliver observes, the humoral pathology has latterly begun to reassume some consequence, and, although it is not likely ever to appear in its ancient form, or to be invested with its former importance, still there can be little doubt that it has been undeservedly neglected.

The facts which have principally contributed to direct the attention of physiologists to the state of the blood, have been the cases of purulent deposits after injuries and operations, or in connexion with phlebitis. They have gone far towards establishing the probability of a vitiated condition of that fluid, as a leading morbid state, and have rendered the existence of pus in it a more than plausible conjecture. We look on the paper before us, which establishes the fact, as a highly important one, and as forming the commencement of a series of enquiries, which will, perhaps, exert a great influence in medicine.

Mr. Gulliver has detected pus in the blood on numerous occasions and under various circumstances. He details the steps of the examination, which was very simple, partly chemical and partly microscopic.

"Those who are acquainted with the minute constitution of the animal fluids are aware of the rapid and energetic action of water on the blood-corpuscles: now the globules of pus undergo no change after having been long kept in water; accordingly if the suspected blood be mixed with this fluid, the blood-corpuscles will soon become invisible, and any globules of pus that may be present will subside to the bottom of the vessel, and may be easily seen, and their characters determined, with a good microscope. Ammonia instantly renders the blood-corpuscle invisible, while that of pus is acted on but slowly by the alkali; and the different action of acetic acid on pus and blood is equally remarkable. Hence I have employed these agents advantageously in conjunction with the other means; and I have also seen pus-globules in the blood, though rarely, without any preparation. With water, however, the examination is most easy, simple, and satisfactory, if the observer be thoroughly familiar with the microscopic characters of the fluids under examination. A good instrument, nevertheless, is necessary; and the admirable deep object glass of Mr. Ross is the one I have principally employed. It is hardly necessary to add, that chyle-globules are not likely to be mistaken for those of pus, since independently of other distinctions, the medium diameter of the latter is at least 1-2666ths of an inch. which is about twice that of the former."

Mr. Gulliver details, in a very brief manner, seven experiments and eleven cases. We shall quote all the experiments.

Exp. 1.—A weak solution of corrosive sublimate was injected into the subcutaneous cellular tissue of a dog's thigh; great swelling of the limb took place, and he died forty-five hours after the injury. A good deal of serum mixed with fibrine was found in the cellular tissue of the thigh, but there was no purulent deposit.

Several pus-globules were detected in some blood obtained from the right ventricle of this dog's heart.

Exp. 2.—A large dog had both his tibiæ injured by some operations connected with necrosis; great swelling of the limbs, with violent fever, succeeded, and he died forty-three hours subsequently.

A large quantity of fibrine was found effused into the cellular tissue of the extremities, mixed, in one of them, with a very scanty proportion of purulent matter.

In some blood, obtained from the vena cava, numerous globules of pus were observed.

Exp. 3.—An irritating fluid was injected into the peritoneum of a dog; he had great thirst, refused food, and died the third day after the operation.

A large quantity of coagulated lymph and sanguinolent serum with some pus was found in the belly.

In some blood obtained from the inferior cava vein many globules of pus were seen.

Exp. 4.—Two ounces of pus were injected into the left pleura of a dog, and very carefully confined there; he was thirsty and feverish for fifty-five hours after the operation, when he was killed.

An ounce of fluid, almost entirely serum, was found in the pleura, and some fibrinous exudation on the membrane.

Blood from the heart, as well as from the vena cava was examined, and found to contain several pus globules.

Exp. 5.—Four ounces and five drams of pus were injected into the peritoneum of a dog, and the wound carefully closed; he died thirty-seven hours after the injury.

There were only nine drams of a sero-sanguinolent fluid found in the peritoneum, and a considerable quantity of coagulated lymph on the membrane.

Pus was detected in the blood.

Exp. 6.—Half a dram of pus, mixed with half an ounce of water, was gradually injected into the crural vein of a dog,

Some fever followed, and he refused solid food for two days, but recovered at the end of a week.

The same quantity of pus was soon afterwards injected into the other crural vein, when similar symptoms were produced, and he perfectly recovered in a few days.

Exp. 7.—Six drams of pus having been injected into the crural vein of another dog, he was not much affected at first, but in a few hours became very weak, was stupid, thirsty, and refused his food. After thirty hours he took but little notice of surrounding objects, his respiration was hurried, and he died thirty-six hours after the operation. In the blood of the inferior cava some pus-globules were readily detected.

We pass to the cases.

Case 1.—A girl died of confluent small-pox on the ninth day of the disease. There was great swelling of the integuments.

In the blood of the right ventricle numerous pus-globules were found.

Case 2.—A woman had confluent small-pox, uncomplicated with erysipelas or inflammation of the viscera.

On the eighth day of the disease some blood was drawn from a vein in the arm: several pus-globules were found in this blood.

Case 3.—A male child; æt. 15 months died on the ninth day of small-pox. Only a few pustules appeared, and these were imperfectly developed: there was considerable swelling in the face, slighter in other parts.

At the post-mortem examination, it was observed that a small quantity of a white opaque fluid might be squeezed from the cut surfaces of the lymphatic glands of the neck and groin: this fluid had the microscopic and chemical characters of pus.

In some blood obtained from the right ventricle and from the inferior cava vein, pus was detected.

Case 4—In a woman who died of puerperal peritonitis, the peritoneum contained a large quantity of coagulated lymph, serum, and purulent matter.

Pus was detected in the blood obtained from the right ventricle of the heart.

Case 5.—James Green, æt. 27, was admited into hospital with an ulcer of the leg. Seven days afterwards, the limb began to swell, and there was hardness in the femoral vein with some remedies in the course of the absorbent on the inner side of the thigh. The swelling of the limb increased gradually; he had first pain in the head, thirst, and quick pulse; then purging; pain in one wrist, with restlessness incoherency of speech, and offensive breath; finally, low muttering delirium, accelerated respiration, and coma preceded his death, which took place on the 12th day after his admission into hospital.

At the post-mortem examination, the large veins of the limb were found to be occluded throughout by firm clots of blood, mixed with pus and coagulated lymph and the lining membrane of the femoral vein was in many places of a red colour and coated with fibrine. In the iliac vein no such signs of inflammation appeared, although there was a large coagulum of blood, which had lost its red color, containing in its centre a small quantityof matter resembling pus. Several purulent deposits in the sheath of the femoral vessels, and in the intermuscular cellular substance.

The matter resembling pus in the clot of the iliac vein had neither the chemical nor microscopical characters of that fluid.

In some blood obtained for examination from the right ventricle and from the vena cava numerous globules of pus were found

Case 6.—J. H. æt. 22, had a superficial wound of the tibia, succeeded by much swelling of the limb, and effusion of fibrine and sanguinolent serum. A few pus-globules were found in blood from the cava.

Case 7—M. J. æt. 42, had erysipelas of the face, succeeded by jaundice, and effusion of an ounce of turbid serum, with a little purulent matter into the right pleura, and eight ounces of sanguinolent serum into the left. Some blood was obtained for examination from the larger veins, and found to be greatly contamiated with pus.

Case 8 —Sergeant Dunn, æt. 29, had profuse suppuration between the muscles and beneath the integuments of the thigh; he died, after some week's suffering, exhausted by hectic.

The purulent matter was extremely offensive, putrefying with great rapidity and sometimes coagulating spontaneously, when set aside for a short time. It was poor in true pus-globules, but contained a large quantity of flaky fibrinous matter, to which its opacity was chiefly owing. Many pus-globules were found in the blood, obtained from the right ventricle.

Case 9 was one of pulmonary phthisis. In the blood obtained from the vena cava and right ventricle, many pus-globules were found.

Case 10 was one of irritative fever from a large abscess behind the trochanter femoris. An ounce of blood was drawn by cupping from the neighbouring sound parts, and some pus was detected in this blood.

Case 11.—In a horse who died with vomicæ, and sero-purulent fluid in one pleura, pus was detected in the blood of the vena cava inferior.

Mr. Gulliver has found pus in the blood in other instances. Dr. Davy has also found pus the the blood in consumptive cases. The latter gentlemen, indeed, has found pus in the blood in seventeen instances after death, in sixteen of which there was declared suppuration, and in one none could be detected: in the latter, the patient died of acute inflammatory disease.

Mr. Gulliver offers some observations on the formation of pus and on the nature of suppuration. But we believe that he intends to prosecute this subject. We shall not, therefore, touch on it at present, but content ourselves with laying before our readers, the conclusions which Mr. Gulliver draws from his experiments and cases.

"The term suppurative fever is not new, and its signification is probably now extended; for it seems to be an appropriate one for the different forms of constitutional disturbance under consideration. If the presence of pus in the blood and the fever in these cases be not related as cause and effect, the coincidence would appear to be no less interesting than remarkable.

What a field of inquiry this view opens to us! Henceforth, whenever a patient is affected with inflammatory fever, or that low typhoid state which is so generally a fore-runner of death, as a consequence of traumatic or idiopathic inflammation, the state of the blood will present an interesting subject of investigation. And this is not merely a matter of curiosity; for the question will arise, whether, in the treatment of such cases, it would not be advantageous to produce suppuration as soon as possible on the surface of the body so as to establish a drain by which the blood might be deprived of the offending matter. It may be asked also, whether the benefit is often effected by blisters, setons, and issues, in certain internal inflammations,—or by incisions which cause suppuration, in inflammatory affections of the integuments, be not explicable by this theory? It is well known that in cases of traumatic or idiopathic inflammation, attended with great swelling and febrile excitement, the establishment of suppuration in the part is generally a favourable symptom, the separation of the pus from the blood being a sort of crisis to the symptomatic fever. In small-pox, it is a popular belief that 'the striking in,' as it is termed, or suppression of the pustules, is a bad symptom; and this is so far true, that the worst cases of this disease are those in which there is great swelling of the integuments without the due formation of pus in the usual situation. In every instance in which I have examined it, I found pus in the blood of patients affected with small-pox.

In the fourth and fifth experiments the pus which was injected into the serous sacs would appear to have been absorbed. A more careful inquiry, however, would be requisite to warrant this conclusion; for in some experiments made by Dr. Davy, the quantity of matter injected seemed to be increased; and I have since made an experiment with the same result.

The absorption of pus being the cause of hectic fever, is an old hypothesis, which the detection of pus in the blood in cases of chronic abscess in pulmonary consumption might be supposed to confirm. It does not seem necessary, however to assign two causes for one effect. When pus in large quantities is incessantly forming in the capillaries, it is easy to imagine how it may become mixed with the blood.

I have related instances of pus in the blood, independently of suppuration out

of the vessels: this fact appears to be of some importance, for it must be inferred that the pus was not absorbed, but formed in the blood.

If it be objected to some of the foregoing views, that pus and extravasated blood are often absorbed without any ill effects, and that no constitutional disturbance many ensue after inflammation and the consequent effusion of fibrine—it may be remarked, first, that pus and blood are probably absorbed in a modified state; and secondly, that a small quantity of pus, like other poisons, gradually added to the circulation may not be productive of bad symptoms. The sixth and seventh experiments may be cited in illustration. It is probable that the degree and type of the fever induced by the presence of pus in the blood may be found to depend on the extent to which it may be contaminated."

He adds:—

"I cannot conclude this paper without expressing a hope that it will lead to a still more careful and extensive examination of the blood in various diseases than has hitherto been attempted. The microscope may become as important an instrument to the pathologist, and even to the medical practitioner, as the stethoscope. If my results should be confirmed, it is hardly too much to expect that some important discovery, particularly in diagnosis, may be made by a patient investigation of the blood in many malignant diseases, such as cancer: it is not long since the urinous fever, as it is called, was found to depend on the accumulation of urea in the blood."

We think it would be premature to offer an opinion on these facts. They call for further investigations, for we are probably only on the threshold of our knowledge of the morbid alterations of the fluids. Mr. Gulliver appears a very zealous young surgeon, and deserves all possible encouragement.

On the present State of the Law of Lunacy. By a Barrister.

We wish that none of the laws of the land were in a worse condition than the Law of Lunacy! A great cry has lately been made against this law on account of some individual and solitary abuses—accidents to which all laws, however wisely framed, are liable. Let us see what the law is:—a person supposed to be of unsound mind is subjected to the separate examinations of two medical men. If then two men are of opinion that the individual is deranged, he can be sent to, and received into a licensed lunatic asylum, where he is, from time to time, visited by the commissioners of lunacy, whose duty it is to see that no man is confined an hour after he evinces symptoms of sanity. Oh, but say the croakers, the two medical men may be ignoramuses, and incapable of distinguishing between a sound and unsound mind! No doubt there are many ignorant men in our, as well as other professions. But allowing that the two who sign a lunatic certificate are ignoramuses, how many *lives* must be annually jeopardized by such practitioners, and yet we have no outcry against these, or even against arrant quacks! But they may be bribed to give false evidence. This is a very likely story. The detection of their ignorance or knavery would immediately follow, and then they would be liable to prosecutions and be ruined for ever! But the croakers have many strings to their bow. Although the commissioners may prove a salutary check on the confinement of sane persons by unprincipled friends and falsifying doctors, yet the temporary imprisonment, between committal and the visitations of commissioners, must drive sane men mad! Was there ever such a statement put forth by people who were actually sane themselves?

From long acquaintance with the subject, and mature reflection on it, we are convinced that, for one sane person who is illegally, of course, committed to a lunatic asylum, there are one hundred insane persons, from false delicacy, or

amiable prejudices, permitted at large, till their property is injured or their own lives destroyed by their own hands. Every multiplication of the forms to prevent improper confinement will only multiply the number of suicides, increase the destruction of property, and extend the sphere of domestic misery. Those who fix their eyes on a few isolated cases of misdemeanor, on the parts of keepers of asyla, entirely overlook the far greater evil of deterring friends from restraining the actions of insane persons, involving their families in ruin, and ultimately winding up the drama by suicide. The reflections that are thrown so lavishly on the testimony of medical men, in their certificates—and on the cruelty exercised in lunatic asylums towards the insane, are, for the most part, false, and the rest are grossly exaggerated. In the course of twenty years of extensive observation, we have never met with a single instance of either of the above delinquencies—in this country at least. Men, whether in or out of the profession, are apt to study their own interests. The physician seldom tries to keep his patients ill by way of increasing his fame and fortune—the grocer will not be ready to insult his customers, on whom he depends for support—nor will the tavern-keeper maltreat the guests who are dining or drinking under his roof. Neither will the medical man risk his reputation and livelihood by signing a false certificate of insanity, knowing, as he must, that the first visitation of the commissioners may blast his professional character for ever, and even subject himself to a prosecution Nor will the keepers of lunatic asylums—who are themselves in a state of sanity—harass or irritate their inmates—or impose restrictions that are more than necessary for the safety of those committed to their charge. And this humanity is dictated by prudence—or, if you please, by SELF-INTEREST. For, assuredly, whoever act otherwise, (and some will do so, as in other departments of life) will very soon have empty-walls instead of well-filled apartments. In fine, the whole outcry is founded on morbid sensibility, false views of human nature, want of experience and observation—or love of notoriety and propensity to blunder.

LAW OF LUNACY. THE MONTHLY CHRONICLE.

We have been gratified by the perusal of the leading article in the above able journal, for December—entitled the "TREATMENT OF INSANITY IN ENGLAND." The following extract will shew how completely the writer coincides with the sentiments which we have stated in a short article on this subject in the present number of the Journal.

"Granting for a moment that two medical men could be found who would thus, for a consideration, put their reputation in jeopardy, and destroy for ever their professional respectability, is it likely that, however little they might care about their character, they could be readily drawn into an act, the commission of which would subject them to be indicted for misdemeanor? Our own impression is, that medical men are too well aware of the responsibility of their position to allow themselves to be led into any such dilemma, and still less to become participators wilfully in such a fraud; but, for the sake of argument, let it be assumed that the wicked relation has succeeded in procuring two abandoned instruments to assist him in his nefarious project. What follows? The supposed lunatic is carried to an asylum. Now, the proprietor of the asylum, or the regular medical attendant of the asylum, must also be drawn into the plot, or it fails just at the point when its completion is nearly effected. The ingenuity, therefore, and the corrupt influence of the chief mover of this complicated drama must be fairly irresistible if he can succeed in gaining over his new adherent, without whose aid all that he has previously effected goes for nothing. But here again—to give the utmost latitude to circumstances—let us suppose that he

has gained his ends, that he has borne down the scruples of two professional men, and of the proprietor or medical attendant of an asylum, and induced them all to place themselves in a situation of serious danger, for the sole purpose of helping him to effect his iniquitous object; he has yet to overcome the greatest difficulty of all. After he has gained over the medical men to sign a false certificate, and then prevailed upon the proprietor or medical superintendant of an asylum to receive and detain the individual against their conviction of his sanity, he must get three commissioners in lunacy (not even having the power of selecting them, as the case must be decided in the order of visitation, of which he cannot, by any means in his power, acquire by previous knowledge) to sanction the unhallowed transaction!"

It is to be recollected, however, that the guards and fences against unlawful and unnecessary detention respect public and private "ASYLUMS" only. There is a great flaw—a great oversight in the Act, which permits the friends of a certified lunatic to be kept in private lodgings, without any surveillance of the commissioners, and without any return being made to the commission, till twelve months after the date of confinement! Here is the grand grievance in the law of lunacy! We cannot better describe this evil than in the words of our talented contemporary:—

"In the asylum there is a perpetual check upon the attendants; and there is constant variety of some sort to break the uniformity,—new faces, a succession of incidents marking the progress of time, and supplying topics to divert and carry off the speculations of the lunatic out of himself,—all of which are essential to his restoration. In the private lodging there are no resources of any kind, except the visits of a physician, brief, perhaps, and irregular: the same face, identified for ever with unchanging stupor, distraction, or coercion, is constantly presented to the unhappy invalid: he looks around for relief in vain; he languishes for something to give a fresh aspect to the scene; and, in this terrible want, cast in upon himself, he feeds upon his delusions, and grows wilder and more intractable day by day, or else sinks into utter imbecility. His keeper, left alone with this demented man, adopts, partly in fear, and partly for his own ease, a system of unnecessary restraint. To him it is an existence of continuous deprivation. He longs also to be at liberty, and may possibly snatch an interval of escape, every now and then, taking care in the meanwhile to make such provisions for the safe custody of his charge as shall effectually prevent any accident from occurring. But the uninterrupted intercourse of a sane and an insane person, thus confined to a single room, is productive in the end of fearful consequences. The keeper, after exhausting whatever benevolence he may possess in fruitless attempts to reconcile the patient to his situation, becomes morose, jaded, and harsh—perhaps vindictive. His nature has not been practised in self-subjugation—an authority is entrusted to him over a superior—he has the whole mangement in his own hands—and how far he may abuse his trust depends upon his moods and his constitution Sometimes it occurs that keepers so circumstanced gradually take the tone of the despairing solitude, and lose their power to meet the exigencies of their position; and instances have actually happened in which they were removed in consequence of visible evidences of approaching madness.

From this outline the choice between the two existing modes of providing for the insane may be determined. If the asylums, in the loose phraseology of the day, may be designated mad-houses, the isolated retreats of individuals may, with great propriety, be described as mad-lodgings."

We are free to admit, also, that, even in the licensed asylums there is room for improvement in the laws that regulate them. Thus it is to be feared that the visitations of the commissioners are not sufficiently frequent—and more especially as relates to the first visit after confinement—which should, we think be within seven days after the restraint on personal liberty. The qualifications,

too, of the keepers of asylums are not sufficiently inquired into. It is needless to expect perfectibility—or rather perfection, in these or other functionaries; but, at present, there is no standard by which to test their knowledge of the disease, their experience in its treatment, their education, moral character, &c. &c. It would also be a judicious enactment, that the keeper or proprietor of an asylum should reside within its walls, or in immediate contiguity, instead of delegating the supervision to other and irresponsible agents. The number of patients, too, ought to be regulated, not by the dimensions of the mansion but by the number and efficiency of the attendants. This limitation of patients would be productive of vast advantages, as conducing, among other things, to more accurate statistical details than have hitherto been obtained.

We recommend a perusal of the article alluded to, most strongly to our professional brethren.

HÆMATOPHOBIA, OR THE BEAUTIES OF CONTINENTAL PRACTICE.

Our learned contemporary (the British and Foreign) has recently introduced us (in h s peculiar laconic mode) to some German worthies, whose productions we shall probably take the trouble to examine next quarter, were it only from curiosity. These worthies are Messrs. Weitzlar, Schneider, and Simon. The works of the two latter are, as usual, only made known to us by name—but fortunately the title alone of these tomes give us a tolerable insight into their nature. The one is called "*Hæmatomania*"—the other "The Vampirism of the Nineteenth Century."

These titles speak for themselves. Dr. Weitzler is less extravagant in his title page, but apparently as unmeasured in his denunciations against the Lancet of England, and the Leech of France, as his hæmatophobic countrymen. "The new Italian school (says our contemporary) and the active treatment of England are his peculiar aversion." The death of Mad. Malibran, by homœopathy, too, is brought forward as an illustration and proof of hæmatomania in this country!! We find no fault with our "Cousin-Germans," or our confreres of France, in denouncing the malpractices of their own brethren; but when they come to stigmatize the therapeutics of this country, without being at all acquainted with the physical differences of constitution between them and us, resulting from diet, climate, manners, &c. they deserve to be castigated and exposed for their ignorance. Who would have dreamt of exhibiting calomel and black-strap to the Bayaderes in the Strand when they were indisposed? Yet there is scarcely more difference between the food and the physique of a German and an Englishman, than between that of a Hindoo and a European. The Germans travel very little in England—the English know more of Germany than the Germans themselves. Who that has rambled from Trieste to the Baltic—or over almost any part of that long route, can have failed to observe the physiological, or rather pathological effects of sour-crout, apple-wein, sausages, tobacco, garlic, rancid oil, and a thousand unutterable, or, at least, undigestible things, that are daily crammed down the throats of our German neighbours? And what are those effects? They are readily cognizable by two of the senses—sight and smell. The rows of German teeth are like rows of stockades half-burned down, and black, in most places, and often every second stake entirely demolished—long before the age of 40 years! The breath is a very compounded exhalation, redolent of garlic from the stomach, tobacco from the lungs, and putrid effluvia from carious teeth. The complexion is tallowy, but well adapted for the growth of mustachios, and the stature, in a great majority of the middle and lower classes, is stunted. For the fidelity of this portrait, we appeal, not to our Anglo-Germanic literati, who seldom travel beyond

the walls of their libraries, and who know about as much of Germany and the Germans, as they do of the dismal swamps in the centre of Australia; but to those who have actually visited the soil of our Saxon forefathers. Taking, then, the diet and constitutions of our continental neighbours into consideration, can we come to any other conclusion than that the same methodus medendi will not answer, at least in extent, for them and for the beef-eating Britons? The difference of constitution on the North and South sides of the English Channel is proved by diseases as well as by remedies. See the havoc produced by cholera in Vienna, Naples, Berlin, and Paris, compared with London and the great towns in England. Even in Scotland and Ireland, where the diet is not so good as in England, the cholera was more severe. We do not, therefore, quarrel with, or criticise, the practice of the Germans, in their own country, but we consider it a piece of great impertinence, complicated with ignorance, that they should set themselves up as censors of British therapeutics, seeing that they are either unwilling or unable to estimate the difference of climate, constitution, diet, &c. existing in the two cases.

If these observations be true, and we think it would be difficult to disprove them, we may appreciate the inutility, nay, the mischief, of attempting to import the *practice* of the Continent into this country, and *vice versa*. How our British brethren have fared in their practice amongst the Germans and French, we will not pretend to say. We suspect that small is the number of Napoleons and rix dollars which they have brought back to these islands. But this we are enabled to say, from pretty extensive observation—that not one in five of those who have studied or sojourned much on the Continent have ever succeeded in this country afterwards. Of this fact we have seen such numerous and melancholy examples, that we have no doubt about it. We throw out the hint to those whom it may concern. To ourselves it is of no importance; but we warn the rising aspirants to transcendental physiology and pathology to take care how they imbue their minds with the timid and *hæmatophobic* therapeutics of our German brethren.

SARATOGA SPRINGS.

These waters have obtained a prodigious reputation in North America, and are resorted to by myriads of valetudinarians of all descriptions. We see that they are about to be imitated at Brighton, by that indefatigable chemist and mineral water manufacturer, Mr. Schweitzer.

The ingredients are potassa, soda, ammonia, lime, magnesia, strontia, proloxide of iron, ditto of manganese, alumina, silica, carbonic acid, nitric acid, sulphuric acid, iodine, bromine, chlorine. This is certainly a splendid bill of fare, but it must be remembered that the dishes are of the most homœopathic dimensions. Thus, in 1,000 grains of the water there are only about five grains and a half of the aggregate medicinal agents—scarcely enough to give the waters a taste or flavour of physic. And of these 5½ grains, 3 are composed of soda and chlorine—nearly one of carbonic acid—leaving about 1 grains for the whole of the other constituents. We have no doubt that all true disciples of Hahnemann will flock to this spring at Brighton, and direct their patients to take, each morning, a drop of this elixir diluted in six beakers of the natural element.

MEDICAL REFORM; BEING THE SUBJECT OF THE FIRST ANNUAL ORATION, INSTITUTED BY THE BRITISH MEDICAL ASSOCIATION, AND DELIVERED AT THE SECOND ANNIVERSARY OF THAT SOCIETY. By A. B. GRANVILLE, M.D. 8vo. Price One Shilling. Sherwood and Co. Nov. 1838.

This is one of the best things which Dr. Granville has published—though written, *currente calemo*, the orator having only a few days to prepare his subject. It is a masterly analysis of medical abuses, drawn from the evidence delivered before the parliamentary committee. The materials are lucidly arranged under three distinct heads, viz.—1. *What is there to reform?* 2. *How far has reform hitherto progressed?* 3. *What yet remains to be done for the accomplishment of a total reform?* These three questions he answers well and supports them by answers of numerous witnesses called by the parliamentary committee. The pamphlet is so important in matter, and so cheap in price, that it ought to be disseminated through every ramification of medical society. Nevertheless we shall give an interesting extract from the third question, in which is embodied the plan of reform recommended by the author. Our readers will see that all its main points have long been advocated in the pages of this journal.

"*What yet remains to be done to accomplish a total Reform?*

On this concluding part of my oration, time will only allow me the utterance of a very few words. But, though brief, I shall endeavour to be explicit, that we may be neither misunderstood nor misrepresented by the enemies of medical reform.

To accomplish this great, this all-important act, England, as one of the great national families of Europe, has only to place itself on an equality with the most enlightened among those nations. At present she stands alone, in the chaotic condition of her medical institutions. In no other part of Europe is the life of a fellow-creature, when invaded by disease, committed to the charge of three differently educated and differently qualified medical practitioners. Let him be poor, or let him be wealthy—lowly of condition, or sitting on high—the victim of disease, in all parts of the Continent, is sure to have by his bedside an attendant to whom an uniform system of education has imparted the utmost knowledge in his profession which a wise government could provide for him. And as for any distinction of rank among such attendants, the laws having prescribed the same education for, and granted the same qualifications to all—leave it to public opinion to establish it. In order to obtain readily results like these, the continental governments have provided one central medical faculty for the whole kingdom; with one or two branches where the territory is too vast, as in France for example. That faculty is directed to apply the same and the maximum test of examination to all who desire to practise the healing art. It is moreover, invested with the power to recognise all persons who have proved themselves able to practise, and to grant to all such the same privileges, to be enjoyed by them in every part of the kingdom, unmolested by any secondary or delegated power. That such a measure of equality and protection on the part of the regent faculty may be justified, the nature and length of education, preliminary as well as medical, of *all* the candidates to be examined in the healing art, have been defined by special laws, which are not made subject to perpetual and capricious variations on the part of subordinate authorities. On the other hand, education itself is made accessible to the most moderate fortunes; and the final examination or inquiry into the proficiency of the students and candidates for degrees takes place in open courts, and not in a private conclave. The examiners do not elect and perpetuate themselves in secret; neither are they remunerated by the fees of candidates. Hence two sources of abuse or corruption are avoided. There may be corruption where there is secrecy, self-perpetuation,

and irresponsibility on the part of the examiners. There may be corruption when, by secret proceedings, large sums of money are obtained from the many for distribution among the few. But, according to the continental system, such species of corruption cannot obtain.

After these preliminary observations, I proceed to offer to the members of the British Medical Association the opinion of their fellow-member who has had the honour of addressing them on the present important occasion, regarding the best mode of effecting their wishes; but I do not call upon them for a pledge of their adhesion to it. That opinion goes to declare that the great Act of medical reform in England will never be thoroughly accomplished, until the following great points shall have been conceded to the profession, and their execution secured by parliamentary statutes.

1st. A maximum degree of education, theoretical as well as practical, both preliminary and professional, obtained either at the existing colleges, or through authorised private teachers, for all medical students.

2ndly. The same uniform, and the highest possible test of qualification, for all who intend to practise the healing art, no matter in what branch; the said test to consist of practical as well as theoretical demonstrations of the candidates' abilities, exhibited at one or more public examinations, to be carried on in writing as well as verbally.

3rdly. One and the same rank and title in the profession bestowed on all who have proved themselves capable to exercise the healing art by the highest possible test of qualification: whether the candidate chose (choose) afterwards to practise as physician, or as surgeon, or both, or as one and the other comprising obstetricy, and any other subdivision of the art and science of medicine:—according as his own taste or inclination, or the strength of circumstances, and the situation he may be placed in, or the opinion of the public, may induce him to act:—thus affording to the poor, and the moderately affluent, as well as to the rich, (the lives of all of whom are of equal value in the eyes of humanity and the laws) the same means, and those of the highest character, for resisting the fatal inroads of disease.

4thly. An equal enjoyment of all the privileges and benefits appertaining to the highest degree of education and qualification as certified in a diploma, by every one possessing such a testimonial, in which ever part of Her Majesty's dominions he may choose to settle as a practitioner.

5thly. The establishment of One Faculty in the capital of each of the three realms—to be governed by the same laws—to be similarly constituted—and to be endowed with similar powers of qualifying candidates to practise in every part of the empire. As each of the capitals has its university for instructing and examining and granting degrees to students in every branch of educational knowledge, their privileges and rights should be left undisturbed in every respect, except as to the right of examining and conferring degrees in the medical art,—which must be surrendered to the medical faculty.

6thly. The medical faculty in each capital should consist of a certain number of eminent practitioners and public teachers, no matter to what particular branch of the profession they may have deemed it convenient or useful to confine themselves. By this provision, candidates would be certain to be examined in all the branches of medical art and science, by persons known to be thoroughly conversant with those branches. The members should be remunerated by a fixed salary, and not by fees dependent on the number of examinations; and to the post of member of the faculty all medical practitioners should be deemed eligible, either by open election or by competition.

7thly. The medical government should be centralised in the three faculties, so as to form but One Body, acting together in the framing and promulgation of the laws which are to regulate the profession—in defending the rights and interests of the latter—in superintending the medical police of the country—and in protecting the public from the ignorant and the pretender. The faculties should

also have the power to establish, with the concurrence of the respective committees of governors, new and uniform regulations for the management of hospitals and the attendance of the medical officers and students, as well for the appointment of the former, which should in future be open to competition on a public trial of skill.

8thly. The establishment of a board is likewise absolutely necessary, to consist of members of the faculty most conversant in chemistry, botany, and natural history, for the purpose of examining and licensing the venders of drugs, and compounders or dispensers of medicines. The same board should be empowered to fix, and from time to time to alter, the regulations by which the operations of the vending chemists and druggists ought to be governed.

9thly. A general registry of all who have been admitted to practise the healing art, as well as to sell and compound drugs, should be strictly kept at the faculty's offices, open to public inspection: so that in case of impostors or unqualified persons, (whose names of course would not appear in the said registry,) being found engaged in practising medicine in any of its branches, or in administering or compounding medicines, or in vending drugs, whether simple or compounded, with any reference whatever to health or disease—a *common informer* may be able to prove the fact by a mere reference of the registry, and convict the transgressor before a magistrate, who shall be empowered and bound to treat the case summarily, and by such pecuniary or other punishment as is awarded in cases of misdemeanor.

10thly. A law should also be enacted by parliament to prevent the sale of poisonous substances, and of all potent medicines by the licensed chemists and druggists, except on the prescription of a well-known medical practitioner.

11th and lastly. Those parts of the acts or charters under which the present medical corporated bodies or colleges claim the right to examine candidates, before the latter can be authorised to practise either physic, surgery, or pharmacy; and all such other acts in existence as interfere with the carrying out of the principles of legislation laid down in the present scheme of medical reform,—should be annulled. But in no other respect should the said medical corporate bodies be disturbed, nor any of their vested rights encroached upon. Their interference with the medical education, qualifications, degrees, and right to practise, of individuals, being once put an end to, the colleges should be permitted to continue the career for which they were originally intended,—that of promoting medical science, through and with the assistance of their halls, their libraries, and their museums. And inasmuch as the said colleges, whether in London, Edinburgh, or Dublin, or elsewhere, were founded for public and not for private benefit; and some of them are even now, or have been, supported by grants of public money: their respective establishments for the promotion of science should be thrown open to the public.

The best and wisest measure which the three corporate bodies in London can adopt under such circumstances, is to form themselves into a Royal Academy of Medicine, divided into three great classes, of medicine, surgery, and pure pharmacy. No doubt but that their example would be followed by the chartered medical bodies of the other capitals and cities. Each class should be limited in its numbers, and have a simple form of government; and all the members of the profession should be deemed eligible to a place in the academy, by election. This academy might become the medical consulting Board of the Government in matters of medical science."

THE LATE MR. LOCKLEY.

For eighteen months or two years before his death, Mr. Lockley was in the habit of occasionally consulting Dr. Johnson respecting an affection of the heart, which

was evidently of an organic nature, being an enlargement of structure and irregularity of function. Dr. J. warned Mr. L. repeatedly against excitement of mind, corporeal exertion and full diet, seeing from the habit of body and the configuration of the frame altogether, that apoplexy, as is often the case, would be likely to result from the cardiac disease. Mr. L. however, was very fond of the pleasures of the table, and it is well known that an eminent physician, whose name we shall not mention, advised him to drink a pint of claret daily, and to live generously. This advice being far more congenial to Mr. Lockley's disposition and taste than the frigid counsel of Dr. J. was, we have good reason to believe, adopted. In respect to the fatal termination at last, we have no doubt that the fall in Euston square was the first effect of pressure on the brain, and that the pressure augmenting on the road, the sickness, insensibility, stertorous breathing, and other phenomena of apoplexy followed regularly in train. It was at this period, of course, that depletion offered any chance of success—and the more so, as the *cause* of the apoplexy was in the heart, and not, in all probability, an old standing disease of the brain, its vessels, or its coverings.

In respect to the melancholy circumstances which attended Mr. L's death, had they merely related to the feelings of *friendship* between two medical men —or the coldness or warmness of heart which might have predominated in the transaction, we should not have considered it our duty to advert to them in a public journal, or sit in judgment on the moral conduct, much less the conscience of one of our brethren. But unfortunately the very nature of the tragedy has called forth an intensity of excitement, and a freedom of comment, that have never before been equalled, on the death of a medical man.

The physician's conduct, on this occasion, extends widely beyond the circle of a private transaction between patient and attendant—or between host and guest. It becomes public property, as it involves important ethical principles, relating to society in general, and to the profession in particular, as we shall presently shew. The consideration of this tragical event may be divided into three heads —1st. As it regards the principal or surviving personage—secondly, as it relates to the medical profession itself—and thirdly, as it relates to a particular class of the profession.

1st. Sir Henry Halford has stated that he stands acquitted, *in foro conscientiæ*, of any neglect of duty towards his patient—of attention to his friend—or of moral obligation to humanity. We are glad of this, on his own account; for, assuredly the "still small voice of conscience" can derive little consolation from the voice of the public, which has, without a single exception, conveyed severe censure on his conduct.

We dwell on this head of the subject with great reluctance; but fortunately the portrait which we have drawn of the President of the College, in our number for July last (p. 194-5) puts it out of the power of our bitterest enemy to impute to us the shadow of personal, political or professional pique towards that eminent physician. The event, however, affords one more proof of retributive justice, even on this side of the grave. For many years past, the learned head of our College has annually mortified, or rather *abased* (by implication at least) his less fortunate and less aristocratic brethren, by extolling the "high tone of moral feeling," instilled into the minds of collegiate "FELLOWS," at Oxford and Cambridge! And what has been the result of this sermonizing for years before bishops, priests, ministers of state, and the elite of the aristocracy:—a very general burst of censure on the "tone of moral feeling," evinced on the late melancholy scene at Tring! This may prove a warning to those who, like the Pharisee of old, lift up their eyes to Heaven, and thank God "that they are not like other men."

We confess that we admire, rather than envy the moral feelings and the elastic conscience of the patron, the physician, and the host, who could abandon the friend, the patient, and the guest, at an obscure village—when stricken with

apoplexy, and incapable of helping himself! We suspect that the unfortunate President (for we think him infinitely more unfortunate than Mr. Lockley) has found it easier to reconcile his own conscience, than the conscience of the public, to the species of "high moral feeling," displayed on the journey to Leicestershire. It was well known that the deceased was in bad health—was the father of two families—was in anything but affluence—and that his children depended almost entirely on his daily professional avocations. These considerations alone would have induced many an ignoble and obscure member of our profession, who had not had the advantage of a University education, to sacrifice a few hours, for the sake of administering professional assistance to an apoplectic brother practitioner. We shall add but one word more to this head of the subject—an appeal to Sir Henry's charity—if not his conscience—in behalf of the large and unsettled family of the deceased. The Baronet's ample means, his extensive influence, and his powerful eloquence, may yet gladden the widowed heart, sustain the helpless orphan,—and make the sod press lighter on poor Lockley's grave!

2ndly.—THE MEDICAL PROFESSION has experienced a wound in the late transaction on the rail-road. Hitherto it has been almost universally acknowledged, at the bar, in the pulpit, and in public speeches, that medical men were distinguished by their liberality, as regarded professional attendance on their brethren, and the families of their brethren, independently of their exertions in behalf of the poor. Although exceptions should not affect general rules, yet there is no doubt but our enemies will be always ready to bring forward this memorable event, and thus by aiming a blow at the HEAD, inflict a wound on the BODY of the profession. The following question has been already asked—and until it be answered in the *affirmative*, the stigma on the profession will remain. "If a prince of the blood—a peer of the realm—or a bishop from the bench, had been in Lockley's situation, would the President of the College and the representative of the medical profession have left him at Tring in a fit of apoplexy, to be carried two miles in an omnibus. and then to have the sage advice of an apothecary's apprentice?" There is but one person in existence who can answer this question in the affirmative—and we are very much inclined to think HE could not do so!

3rdly.—No evil, we believe, ever occurs without some attendant good, sooner or later. Were it otherwise, "chaos would come again." The late tragical end of Mr. Lockley will open the eyes of the public, and of parliament to the "wisdom of our forefathers"—the ridiculous and mischievous system of medical education which trains one man for physic, another for surgery, and a third for pharmacy—each comparatively ignorant of the others' departments, though there is no natural boundaries between them, and it is perfectly evident that *all* the departments should be *equally* taught and learnt, by every member of the profession, however he may choose to practice afterwards. In other words, every medical man should be ABLE to practice physic, surgery, and pharmacy—though he may not be *willing* to do so when he leaves the schools. But what is the case now? A valuable member of society falls down in a fit—there is a cry for a doctor—and lo, there is one on the spot. Every one presses to know what ought to be done. The doctor says the patient must be bled. Instantly the clothes are stripped off—the arm bared—and some female unties the ribbond from her waist to compress the veins of the patient. But the doctor exclaims, "not so fast good people. I can tell how much blood should be taken—but I can't bleed. And even if I could bleed, I dared not do so, because it is against the laws of my college." This is a precious state of things! But whenever the subject of medical education comes before parliament, the transaction at Tring may and will form an excellent illustration of the incongruous, absurd, and injurious laws which now regulate the instruction given to medical students.

DIALOGUE BETWEEN A PHYSICIAN AND A PHYSIOLOGIST; OR, MECHANISM *versus* VITALISM.

(*Scene a Laboratory.*)

Physician.—Is it true, my dear Magendie, as reported in your lectures, that you can produce *inflammation* in the dead body?

Magendie.—I can.

Physician.—The cardinal points or phenomena of inflammation, as laid down by all writers, from Celsus to the present time, are rubor, tumor, calor, dolor.

Magendie.—Very well.

Physician.—Can you produce *rubor* in the dead tissues, and if so, by what means?

Magendie.—Nothing more easy. I dip the parts in red ink, or inject the *vessels*, with red wax.

Physician.—The tumor?

Magendie.—By injecting the *cellular* membrane with warm fluids of any kind.

Physician.—The calor?

Magendie.—I immerse the parts in hot water, or hang them before the fire.

Physician.—Humph! These are very mechanical processes for producing the first three phenomena of inflammation!

Magendie.—Doubtless. But all Nature's processes, in health or disease, are mechanical, quite as much so as those by which I imitate her operations.

Physician.—There is one phenomenon more, however, which I think will pose you. How do you produce the dolor?

Magendie.—There you are in the clouds and fogs of vitalism—clouds and fogs by which you strive to conceal your ignorance. Sir I admit the existence of no phenomenon or process in the living or in the dead body, but what can be made cognizable to the senses. We have no other inlets of knowledge than through the five senses. Now, Sir, I ask you, can you *see* pain? No. Can you *touch* pain? No. Can you *hear* pain? No. Can you *smell* pain? No. Can you *taste* pain? No. Then, Sir, what monstrous absurdity is it to talk of a phenomenon presenting itself, you say, in a patient before you, and of which you cannot learn the most minute iota by the evidence of your own senses! Sir, I repudiate, scorn—nay, detest, all those phenomena and explanations which are founded on vitalism,—and thus I throw them to the winds.—While pronouncing these last words, with great violence of gesture, and action of his arm, which he waved over his head, he struck his right hand with such force against a lamp which hung in the laboratory, that he roared with agony, and thrust his knuckles into his mouth to mitigate the *pain!*

Physician.—Ah! Friend Magendie! What say you to the evidence of the senses now? Here M. Magendie flounced out of the laboratory, and slammed the door in the physician's face, who was following him in a convulsion of laughter.

DR. GRANVILLE AND DR. ROE.

In our notice of Dr. Roe's work on Hooping-cough, in our last number, we made a mistake of twenty instead of ten years as the period of Dr. R.'s experience of prussic acid, thus leaving Dr. Granville ten years of priority in the use of the remedy.

DR. SCHOLEFIELD AND DR. HOOPER.

In our Journal of October 1837, we took a short, but favourable notice of a little work on the climate and diseases of Jersey, by Dr. Hooper. It appears that Dr.

Scholefield furnished the Medical Chapter of Mr. Inglis's Work on the Channel-Islands, published in 1834, and he now comes forward to accuse Dr. Hooper of plagiarism, and of culling materials from his Chapter above-mentioned, without acknowledgement for his recent pamphlet. In the JERSEY TIMES, of the 23rd of November last, Dr. Scholefield has collated, in juxta-position, the original passages and those which he deems to be pirated by Dr. Hooper. We have not space for this controversy about priority; but, on glancing over this collation (not a cold one certainly) we apprehend that Dr. Scholefield has some reason to complain on this occasion—not of us—for our commendation of the pirate (if a pirate) was surely a compliment paid to the original writer.

SCOTT ON COVE.

To the Editors of the Medico-Chirurgical Review.

GENTLEMEN.—May I beg to call your attention to one or two errors which crept into the notice of my paper upon the Medical Topography of Cove, and which you did me the favor to call the attention of the profession to in the Number just published of your valuable Journal. Your reviewer writes thus—"this is Spike Island at the entrance of Cove Harbour, &c." Now the sentence should be, *this is Cove in the County of Cork.* Spike Island is barely incidentally mentioned in my paper, and how the accident of substituting it for Cove could have occurred I do not know. Again, the reviewer says at line 40, "the island and its village are sheltered from the winds, &c." This should be *the town* is sheltered from the winds, &c.; for it is the town of Cove that enjoys protection from the colder winds, and not the island. It is beside a large town, and it will give an idea of its size when I name its population at near 9000 souls. These errors I need only point your attention to, I am certain, to have corrected; as to your readers they would convey, indeed, a very erroneous idea of, without any partiality, one of the most beautifully and favourably situated towns that can be seen.

Your most obedient and obliged servant,

Cove, July, 28th 1838. D. W. SCOTT.

FURTHER TESTIMONY OF THE REMEDIAL VALUE OF THE CARBONATE OF SODA.

I have long prescribed it—frequently in large doses; and without enumerating its beneficial action in typhus fever, in dyspepsia, certain states of anemia, &c. I will content myself in pointing out its great value in the treatment of phthisis. Some of the numerous cases in which I have prescribed it are on record in my recently published work on consumption and scrofula; and, so far from its having caused liquefaction of the blood, infiltration of the lungs, or pneumonia, I think I have great reason to laud its tonic effects in removing crude tubercles, as well as in obviating that state of superabundant carbon in the blood, and that sluggish condition of it, which I believe to obtain in phthisis, in some of its stages, and the existence of which I have, in that work endeavoured to show. It has been especially useful in threatened cases of tubercular infiltration. It has not even appeared to increase the frequency of that intercurrent pneumonia which is so often observed to occur in phthisis still less to give rise to it; indeed, my experience would incline me to support the very reverse propositions.

The direct injection of the carbonate of soda into the blood is one thing; but the introducing it into the stomach is another; and whether or not it there meets with free hydrochloric acid, or is otherwise changed, the ultimate effect, as regards the blood must be very different from that of direct injection; at all events, similarity or identity of effect must not be hastily assumed.

Hartford, Nov. 18, 1838. J. J. FURNIVALL, M. D.

EXTRA-LIMITES.

An Account of an Epidemic Cholera, which prevailed in the District of Berehaven, in Ireland, in the Autumn of 1837. By *Edmund Sharkey*, M.B. T.C.D.

During the months of September and October, 1837, an epidemic diarrhœa prevailed here to a very great extent, in very many cases combined with vomiting, and amounting to a bilious cholera; but never presenting any approach to the malignant type. It affected adults exclusively, and yielded almost universally to laudanum, given in doses of 30—40—50 drops in a little peppermint water. Very rarely it lapsed into dysentery, and required the employment of calomel, opium, and hippo, followed by astringents. About the end of October, it had nearly subsided, but at the beginning of November the malignant form of the disease appeared at Castletown; no case existing of it at the time in any part of the surrounding country. The prominent symptoms of the disease being the same as elsewhere observed, are already sufficiently known. There was one however, which presented itself very frequently, viz. a sense of "blowing" in the ears, which I had not previously noticed. A remarkable circumstance was, the almost constant uniformity of the hour at which the disease made its attack: this was, in nine cases out of ten, a little before day-break. Whether this was merely a coincidence, or whether it depended on any particular stage of the digestive process, I will not pretend to decide; we know that the attacks of several diseases are periodical.

With regard to its mode of propagation, that is a point on which I will not now touch; I will confine myself at present to practical considerations.

The number of cases which occurred in this district, comprising the Barony of Bere, and containing a population of 15,000, was 360, out of which there were 162 deaths. The duty was divided between my friend Dr. Philip, A. Armstrong, and myself; and I believe I may safely assert that never did duty more laborious fall to the lot of medical men. Ah! little do city practitioners, who have only to go round their hospitals and issue their orders, know the difficulties, obstacles, and discouragements, which the provincial physician has to encounter in such a country as this. Judge what sort of co-operation we could expect in the treatment of such a disease as cholera, in cabins wholly destitute of all the appendages of comfort, nay even of the most indispensable household utensils, and where the sole assistant (as was the case at the commencement) was some devoted person, generally an old stupid creature, whose life was not considered by the runaways as worth preserving.

Often in one of these wretched hovels, where I could scarcely stand upright, have I been obliged to go my rounds to the straw beds of four or five individuals stretched in all the horrors of cholera on a damp floor, to give them both medicine and nourishment, and frequently delayed a long time for the mere want of a spoon in which to give them. Obliged, then, to go through the several operations of killing, skinning, and committing to the saucepan, a chicken to supply them with broth, which I have been obliged, for want of a messenger, to carry from house to house. I could easily enlarge upon these various vexations, but will only add that, when it is further considered that the practitioner has to go through such a routine as this several times in the day, at places remote from his residence, and from each other, and in so doing to travel over roads scarcely deserving the name, perhaps, in bad weather, it will not, I think, be denied that

it requires no small stock of perseverance to struggle against such a tide of opposing circumstances.

Of the cases, 154 were males, 206 females; of the deaths, 71 males, 91 females. Of the cases which fell to my lot, I was unable to take notes of more than 103; many died before I could reach them, and to others I could not go at all.

These cases were as follow:—

Age.	No. of Cases.	Recoveries	Deaths.	Deaths in Collapse.	Recovered from extr. Collapse.
Over 50	23	7	16	9	0
40	8	3	5	5	0
30	18	13	5	0	4
20	20	14	6	6	4
10	13	8	5	5	4
5	14	3	11	9	2
1	14	8	6	4	2

Hence it will appear, that, in forming a prognosis, the age of the patient is an important element of the calculation; and is also one on which, in fatal cases, will greatly depend the period of the disease at which death ensues.

Thus, we see that above the age of 40, there was no case of recovery from collapse in the second degree, or extreme collapse; while, as we descend, we find that, within certain limits, the powers of resistance or re-action increase. Thus of 13 recoveries between the ages of 30 and 40, four had been cases of extreme collapse: from which we may conclude that the age at which there is cæteris paribus, the best chance of recovery is that between 10 and 40; those above the one and below the other, being seldom able to withstand the consecutive fever ensuing on the state of extreme collapse. For the convenience of detailing the treatment, I will divide the disease into three stages; viz. the 1st, or premonitory; the 2nd, or that of collapse, in the first degree: and the 3rd, or collapse in the second degree.

First, or Premonitory Stage.—This, in a majority of cases, consists in what would, in ordinary times, be called simple diarrhœa, with the addition, sometimes, of an occasional cramp, and an absence or diminution of bilious colour in the discharges, sometimes there are merely borborygmi. If there be no diminution of bile in the fæces a commanding dose of tinct. opii, *e. g.* gtt. lx. (to an adult), will frequently arrest the disease; but if the secretion of bile be also diminished, we should premise cal. gr. iii., op. gr. ii., and in the course of an hour or two (if necessary) give the laudanum. If nausea be also present, the addition of a few drops of ol. menthæ pip. will be advisable. This form of premonitory stage, exists sometimes for several days without advancing further, being occasionally so slight as to attract little or no attention; and such cases have been by some authors set down as the most dangerous; but I have found it otherwise, and, indeed, would à priori expect to find it so; for the symptoms becoming, as it were, stationary on the threshold, imply a power of resistance to the inroads of the distemper. In some cases there is at first no affection of the bowels, but merely a general feeling of malaise, conveyed by the people here in the vague expressions of a "great weight about the heart," with an unaccountable degree of languor, depression, and weak pulse. This, in my experience, has been the most rapid and uncontrollable form of the disease, and generally

occurs in persons worn down by previous apprehension about it; as by unrelieved attendance on the sick. Vomiting, purging, and cramps come on almost simultaneously, and carry off the patient in three or four hours. In this case, I have found the following *formulæ* very useful—℞. Camphoræ ʒi., tinct. opii ʒss., ol. menthæ pip. gtt. xvi., tinct. cardam. comp. ʒiss. solve. A drachm of this tincture may be given in any agreeable vehicle, and has, I think, rescued many from impending cholera. More rarely the first symptom is vomiting, in which case, it being probable that there are some offending matters in the stomach, an emetic is the most advisable remedy. Most rarely of all does it happen that the disease begins with cramps; and here the combination of camphor, opium, and capsicum, sometimes acts like a charm.

Case. A man, aged 60, at the burial of his wife, who had died of the disease, drank two glasses of raw whiskey on an empty stomach. Shortly afterwards, he was attacked with moist violent cramps of arms, legs, and thighs, hurried breathing, jactitation and nausea, but no vomiting nor purging. He had also the decided cholera expression of eye. I gave him 4 grains of opium, 10 grains of camphor, 3 grains of capsicum, and 4 drops of oil of pepperment, followed by a cordial draught, and ordered heat to be applied to the extremities and spine. In the course of a few hours copious perspiration, followed by sleep, came on; and he was well. In all cases it is most important that the patient should be at once placed in bed, as nothing is more injurious in every stage of the disease than the exertion of gaining or keeping the erect posture, and it has happened that they have died in the effort. The usual means for preserving or restoring a proper temperature, should at the same time be resorted to. If the treatment above recommended should not arrest the disease, and diarrhœa continues or supervenes, or where there is, in addition, an irritability of stomach, forbidding the use of remedies by the mouth, an enema, containing plumbi acetat. ℈ii., tinct. opii ʒi., ought to be immediately administered; and this invaluable remedy is the sheet-anchor also in treating the more advanced stages.

Second Stage, or Collapse in the first degree.—By this I would be understood to mean that state in which there are vomiting and purging; the heat, though diminished, not being wholly extinct, and the skin dry, or at least not covered by a cool perspiration: there is also the sunken eye and hollow voice, the cold tongue and breath, and absence of pulse, with or without intense thirst and cramps. The latter, though generally attendant, is not always. In some old debilitated subjects the vis vitæ seems so completely extinguished as to be incapable of the abnormal nervous action. Neither is the danger always in proportion to their severity when they do occur.

As to the prognosis in this case, we may state generally that if matters remain stationary for six or eight hours, this will be favourable. Within that time, in such cases, warm perspiration commonly sets in, purging wholly in great measure ceases, water is passed and vomiting is superseded by nausea and eructations, in short, a mere irritable stomach amenable to ordinary remedies. And with respect to vomiting in general in this disease, I have long learned to look upon it as by no means *the* formidable symptom. On the contrary, I consider it as an indication of a certain vital energy remaining, and have seen cases terminate most favourably where it has continued incessant all through. I accordingly never think of endeavouring to check it directly; nay, where it has ceased before reaction has begun to set in, and where, the thirst continuing, a quantity of fluid is accumulated in the stomach and oppresses the respiration and the general system, I am sure it is advisable to re-establish it. The following is a case in point.

Daniel Hanly, æt. 60, an asthmatic of long standing, 13 hours ill. *Symp-*

toms—vomiting, purging, cramps, &c. Has taken plumbi acet., capsicum and opium, with fluid stimulants, which were all rejected. Vomiting has ceased for some hours, during which he has drunk a great deal, chiefly water, and has retained all. Complete collapse—no pulse—cold surface—respiration much impeded, and great fullness of stomach. I gave him a mustard emetic, which operated immediately, and caused the discharge of above a gallon of fluid. The improvement which instantly followed was very marked. The pulse became distinct, the respiration easier, and, though he had been apparently almost moribund, he rallied completely, and for some days seemed likely to do well, but subsequently sank in the consecutive fever.

Treatment. The great object to be kept in view in this, as in every other stage of the disease, is the checking of the diarrhœa, and, for effecting this, I know of no means so effectual as the injection of acet. of lead and tinct. opii, as above directed; observing that the quantity of water used should not be large, (about 4 oz.), to avoid mechanical stimulation of the gut. The strength must be supported by weak chicken-broth, thin arrow-root, sago, and wine in small quantities at short intervals. The best stimulants are, I think, preparations of ammonia. The spirituous stimulants must be given very sparingly, and only in a dilute state. It was here that the most capital errors were committed in the treatment of the disease on its first appearance in these countries. I was myself, among others, entirely led away by the idea that the most powerful stimulants ought to be employed for rousing the system out of a state of such extreme prostration, not reflecting that the blast which gives intensity to the furnace will extinguish the flickering taper. To shew the fatal effects of this wholesale stimulation I will quote a case.

A hale man, 60 years of age, was attacked on the night of the 9th November, 1837. He got some pills containing camphor, capsicum and opium, followed by a draught of hot, strong punch. About 12 o'clock at noon, the day following, when I saw him, the pulse and heat had returned, and he was inclined to sleep, but when roused there was a certain wildness of look and manner about him, for which I could not at the time account. His friends, as I afterwards discovered, had given him two tumblers of punch, which not then knowing, I did not warn them against such a mode of proceeding. I left him, fully confident that healthy reaction had been established, and that he was in a fair way of doing well. In an hour after he was dead; and on enquiry I learned that, after my departure, he asked for a glass of pure brandy, got it, sat up in the bed, drank it off, put up both his hands to his head and died.

I candidly acknowledge that I formerly did a great deal of mischief by indiscreet zeal in this respect. Whatever differenee of opinion there may be about other confessionals, a medical one would, I conceive, be of infinite service to the profession and society at large; and if some man of extensive experience and high character (for even such have made mistakes) would publish his "errors," such a medical chart would warn off from dangerous rocks and quicksands, and prevent many a wreck. Of "successful cases" there is no lack—we are pretty sure to hear of them, while those of an opposite description are commonly included in an act of general amnesty. The spirit, ammon. aromat. is one of the mildest and best diffusible stimulants we can employ, being free from the effects on the sensorium, which form the great objection to the spirituous; indeed the use of ammonia contemporaneously with spirituous stimulants exercises a control over this deleterious property—ʒj. of the spt. ammon. arom. may be diffused through ʒxij.—xiv. of water, and half a wine-glass given every quarter of an hour; its increase, diminution, or suspension being of course regulated by the effects produced. It is of the last importance that the most unremitting attention be paid to the support of the strength by light nourishing drinks, as before observed; and also that the patient should be prevented from assuming the erect posture, than which nothing more exhausts the feeble powers

that remain. I have, in addition to these, always given calom. gr. j., cret. ppt. gr. iij. capsici, ½ gr. every second hour, with a view to restoring the secretions. Here also the external means of restoring heat should not be neglected, but excess is as carefully to be avoided as in the matter of internal stimulants, and I am sure I have seen mischievous results from overacting this part also. The application of tin vessels containing hot water to the soles of the feet and calves of the legs seems sufficient. Sinapisms to the chest and epigastrium are also advisable, particularly in those cases where there is a great degree of præcordial oppression; and they should also be applied to the back of the neck and calves, where, on the establishment of reaction, there appears a tendency towards affection of the head; and this should most promptly be attended to, in the case of children especially.

Consecutive Fever.—As before observed, this stage generally terminates in a state which scarcely deserves a more formidable epithet than simple fever, or, at farthest, the mildest form of typhus; there being merely a tongue coated white, quickness of pulse, flushed face, and no further evidence of a local determination than the irritability of stomach before alluded to, which, though often obstinate and troublesome, is not dangerous, there being no evidence of gastritis; and the symptom generally yields to magnesia and rhubarb in peppermint water and effervescing draughts, and seldom requires even the application of a blister. Sometimes however it proves more lingering, seems to have no tendency to termination by crisis, commonly so called, and must be treated on general principles. It must be understood that the above doses are for adults, and this must be borne in mind all through these remarks.

Thirdly, Collapse in the Second Degree.—In this are superadded to the last group of symptoms complete loss of heat, the surface being covered with cold clammy perspiration. The voice is sunk to a whisper. In some cases there is a cessation of the cramps, in others they continue and extend to the trunk, frequently the region of the stomach, (a very fatal symptom). Sometimes an intolerable præcordial oppression amounting to agony, from which the wretched victim calls on death to release him. Sometimes there is a grumous diarrhœa, which also is a very fatal accompaniment. The thirst in some cases is intense, in others not at all so—and very frequently the drinks are all retained, the stomach having as it were lost its sensibility. The patient lies in a lethargic state, his eyelids partially closed, and exhibiting the white of the eye, the conjunctival vessels of which are sometimes slightly injected—when roused from this state his intellect is quite unimpaired, and remains so till within a very short time of the closing scene. This state of things may last from three or four hours to as many days, but the latter is rare. This is a condition from which no aged person and but few children will be found to recover, because the consecutive fever which ensues upon this aggravated form of collapse is uniformly severe, and neither of these two classes of patients has stamina to withstand it.

The Treatment of this stage is substantially the same in principle as that of the foregoing—the urgency of the danger enforcing a stricter attention to the several particulars above detailed, and particularly as regards stimulation. In the consecutive fever after this stage the typhoid type is very marked indeed. In old people and adults there is seldom any particular local affection discernible, but in young children the head is almost universally engaged, and the symptoms come on so rapidly that nothing but the most prompt and vigorous measures will be successful; even an hour's delay in the recognition and treatment of them may prove fatal. "Venienti occurrite morbo" is in no case a sounder maxim than in this.

Case.—March 28th, 1838, (10½ a. m.) Joan Owney, æt. 4—ill ten hours. Is just rallying from extreme collapse. A sinapism has been applied to her chest, an injection of starch and tinct. opii has been given. Vomiting and purging continue, but less—pulse and heat returning; lies with eyes exposed gr. and turned up in the sockets. Has taken 1 gr. calom., cret. ppt. gr. iij., op. gr. 1-6th, also a little weak cordial, and a little mist. camphoræ, with a small quantity of laudanum. 2 *o'clock, p. m.* Coma rather less—stomach quiet, but purging of white matter continues. I ordered stimulants to be stopped, put a blister to poll, and had the starch injection repeated with the addition of plumbi acet. gr. vj. tinct. opii, gtt. xxx., the whole amounting to f. ʒij.

29th, Noon. Blister has risen well. She is still drowsy, but sensible when roused—eyes clear, pupils contracted—heat not above natural—bowels confined—no urine. Sumat statim calomel, gr. v. Necnon, calom., p. jacobi, ā gr. j. 2dis horis. Sinapisms to calves of legs—stop chicken broth—drink whey.

7½ *o'clock, p. m.* Is sleeping naturally—sinapisms acted well—pulse 112. Passes flatus from bowels, which are confined and sound, tympanitic—injiciatur enema fætidum—pergat.

She continued to improve, and eventually recovered, having passed by mouth on the 31st a long worm alive—a circumstance very frequent in these patients.

I will relate another case to shew the insidiousness with which this fatal form of consecutive fever sometimes makes its attack when matters appear to be going on favourably.

Michael Shea, æt. 4, was attacked early on the morning of 12th April, 1838. I saw him at ½ p. m. in a state of extreme collapse. I ordered an injection of plumbi acet. gr. v., tinct. opii, gtt. xxx. Applied a sinapism to epigastrium and mucha, and gave calom. gr. ½, cret. gr. j., capsici, gr. ½.

2 *o'clock, p. m.* Reaction commencing—pulse sensible—head wet with warm perspiration—heat generally returning—enema was retained. Wishes for cold water. Has taken two of the powders of calom. capsic. and cret. Eyes turned in sockets, but clear and bright when roused. Voice strong. 6 *o'clock, p. m.* Same state, except that vomiting and purging have ceased. Applicat. vesicator nuchæ—sumat. 3tis horis calom. gr ½, cret. gr. j.

13th, 3 *o'clock, p. m.* Blister acted well. Appears to sleep naturally—is peevish when disturbed—countenance natural, except a slight remnant of cholera expression of eye—skin cool—tongue moist, yellowish. A slight discharge of greenish fluid from bowels, which are tender and tympanitic. Took this morning calom. gr. iij., p. antim. gr. ij.—injec. vesperi enema fætidum. 14th. Seems quite easy—sleeps a good deal, but is restless in it—skin natural. The injection brought away nothing but some greenish watery fluid. Two worms were discharged to-day, one by mouth the other by stool, the former alive. Belly continues tympanitic. Tongue moist. Passed urine to-day.

From this until the 16th he seemed to improve, when he took a decided turn for the worse. He became quite comatose. It was impossible to rouse him. His pupils at first used to contract to light, but were afterwards permanently contracted. He used to grind his teeth, and his bowels were obstinately costive, except that an enema occasionally brought away some slimy fæces. Blisters and sinapisms were tried to no purpose, and he died on the 19th, at 10, p. m.

I will now, in conclusion take a cursory review of the remedial agents which have been used by myself and others in this disease. *Bleeding.*—I have not seen in the course of the late epidemic any case of the actual disease in which it was at all indicated but one, viz. the first of the cases which I have recorded. It was not practised in that case, and the patient recovered. The only stage of the disease, I think, in which any reasoning physician ought to think of it, is the premonitory, and only in that rarest form of it in which there are violent cramps, no diminution of heat, with a certain degree of excitement and strong

pulse. In the consecutive fever it is otherwise, but even there must be adopted with caution. I saw only one case in the late epidemic where I thought myself justifiable in recommending it; it was a case where there was a decidedly active determination to the head, with delirium—the subject a strong man. It was not submitted to, and he also recovered.

Opium may be given by mouth in the premonitory stage freely, in the first stage of collapse more sparingly by the mouth, but freely in enema, as elsewhere recommended. In collapse in the 2d degree, if the discharges have ceased, it is madness to give it in either way; if not, it may be given in enema, not only without danger, but with the greatest advantage. There is however a combination of it with camphor, the formula of which I have before given, which I have used in every stage without (as far as I have observed) any injurious effects in any. In those cases which, though properly designable at first by the term "cholera-phobia," yet imply a state of nervous predisposition to the disease that often ultimately glides into it, I have found it most useful; and even in the extreme collapse, where the discharges have ceased, it sometimes appears to restore to the stomach its excitability, the administration of it being in many instances quickly followed by a copious discharge of fluids, which for a considerable time previous had remained a useless incumbrance to the organ. It is in my opinion a very useful medicine to keep at hand, during the prevalence of an epidemic, in families and in districts where, from their extent and remoteness, the physician must of necessity often prescribe without seeing the patient.

Acetate of Lead.—I cannot speak very highly of this medicine given by mouth. I have tried it very extensively in combination with capsicum and opium, and do not think that it exercises any control over the decidedly malignant form of the disease. It is a most powerful medicine in sporadic diarrhœa which has resisted other remedies, and, as there are many cases of this mixed up with those of cholera in the course of an epidemic, I suspect that, from its acknowledged efficacy in them, it mainly (I do not take it on me to say entirely) derives the high character which some eminent physicians have conferred upon it. In the form of enema it is however invaluable.

Calomel.—This in small doses is advisable, not as exercising any specific power of rallying from collapse, but as tending to restore the secretions. It was given in truly *heroic* doses in the early treatment of cholera in these countries, and it will be remembered that the current aphorism was "salivate your patient and he is safe." But I may here remark that in no case of recovery from it, though I universally employed calomel, was there the least appearance of ptyalism.

Cold Water.—This has been extolled at different times as a remedy of great value. The true state of the case, however, I conceive to be simply this. The cases in which it is so anxiously desired and so copiously drunk are in general those in which a considerable degree of vital energy remains, evidenced by the intense thirst and constant vomiting, and which would recover as well under the use of other judicious means. One thing is certain, that it does no harm, and it is pleasant to be able to gratify the sufferers in this respect without prejudicing their chance of recovery.

Emetics.—The utility of these I am disposed to limit to that form of premonitory stage in which vomiting is the first symptom, and that form of collapse in the second degree which I mentioned before, in which there is an accumulation of fluid in the stomach. *Stimulants.*—I have already stated my views respecting these. *Sinapisms.*—These are useful in a twofold point; 1stly, for

helping to rouse the dormant sensibility: 2dly, for counter-irritation, where local determination impends. They act more speedily than blisters, and are therefore so far preferable.

Nourishment.—This is a point of primary importance, and I believe that much of the mortality which prevailed in the early treatment of the disease in this country was owing to practitioners trusting too much to medicine, and vainly seeking after some specific, while they suffered this to be neglected.

The patient ought to be abundantly supplied with diluent drinks, and small quantities at a time of light nourishment of the liquid kind. The success of the case depends as much, I would say, on the diligent administration of these, in conjunction with other matters, exclusively the province of the nurse-tender, as on the skill of the physician; indeed, without the cordial and efficient co-operation of the former, the best efforts of the latter must prove nugatory and end in disappointment.

Having extended these remarks to a much greater length than I had originally intended, I will now conclude, expressing a hope that the hints here thrown out, may not prove altogether useless to those who may be hereafter called on to treat this most formidable malady.

I remain your obedient humble servant,

EDMOND SHARKEY, M.B. T.C.D.

HASLAR HOSPITAL.

A CASE OF PERFECT ANCHYLOSIS OF THE FIVE SUPERIOR CERVICAL VERTEBRÆ TO EACH OTHER, AND COMPLETE DISLOCATION BACKWARDS, OF THE FIFTH FROM THE SIXTH, WITHOUT FRACTURE. By *Stephen S. Stanley*, Assistant Surgeon of Haslar Hospital.

History of the Case sent with the Patient; with the subsequent Symptoms, and Treatment pursued by Dr. Mortimer, the Senior Surgeon, under whose care he was placed.

George Weldon, æt 37, seamen, lost his footing yesterday evening, the 20th of July, 1838, about nine o'clock, and fell backwards, on his head, on the deck. Found him immediately afterwards complaining of a severe pain in the back part of his neck, and between the shoulders, and of pain and numbness in the arms. His face was pale, and his pulse weak. Five grs. of Carb. Ammonia in an ounce of camphor mixture was administered—after which he rallied. He is worse this morning, complaining now of numbness, not only in the arms but also in the legs; of the pain in the back part of the neck being more severe, and of inability to turn or move in any direction. As the ship is in dock, it is thought advisable to send him for the benefit of hospital treatment.

(Signed) JAMES M. DEAS,

July 21st, 1838. Assistant-Surgeon, H.M.S. Pique.

Admitted into the Haslar Royal Naval Hospital, on the 21st of July, 1838, at eleven A.M. in a state of perfect consciousness, no wound, no external appearance of bruise. Both arms are commencingly paralytic, the left the most so—the accident occurred yesterday evening, since which he has not passed urine, nor have the bowels been opened; the pulse is slow, weak and oppressed. Pupils unaffected, nor does he refer to any complaint, save about the muscles of the neck and shoulders.

His breathing is undisturbed, catheter introduced, haustus sennæ statim, enema. Evening: a free evacuation of the bowels, pulse up and sharp, enema repr. v. s ad. xx ounces. 22d July: Respiration is hurried, the pulse is weak, there are continual attempts to expectorate a frothy mucus, but the attempt is ineffectual—is most anxious to inhale air, he desires to be raised higher—higher still—this is accomplished with facility, by the rude yet excellent apparatus of Borthwick, repr. enema—Catheterismus, hyd. submur, grs. vj., pulv. jalap. a scruple, syr. q. s. ft. bolus statim. Noon:—He is easier, he breathes more uninterruptedly, but the pulse flags. Evening: Respiration laborious, death is approaching. Died at half-past four o'clock on the morning of the 23d, exactly fifty-five hours and a half after the accident, and forty-one hours and a half after his admission into this Hospital.

POST MORTEM.—On the posterior surface of the body, extending from the occiput to as far as the 6th or 7th dorsal vertebra, there was considerable ecchymosis; and in making a section of the integuments and subcutaneous cellular tissue, a quantity of blood was found effused into its texture. In prosecuting the dissection further, especially in a space reaching from the first cervical to the second dorsal vertebra, coagulated blood in great quantity was found surrounding the muscular fibres, a number of which were ruptured and softened; these being sponged away, a little more careful dissection exposed to view a considerable displacement *backwards*, of the 5th from the 6th cervical vertebra. All the blood was sponged and cleared away, and as much of the soft parts removed as was possible, for the purpose of ascertaining the exact position of the dislocated vertebra. It was then found that the little finger could easily be passed, underneath it, into the spinal canal; that the body of the 5th pressed severely on the spinal cord, and rested on the lamina and spinous process of the 6th cervical vertebra. The spinal column was now removed (sawing through the angle of the ribs) at the 7th dorsal vertebra. It was then ascertained, beyond all doubt, that the injury was a complete dislocation, *without fracture*. The ligaments and intervertebral substance were all ruptured; and, when suspended from above, the parts were held together by the vertebral arteries and spinal marrow, with its theca alone; the theca vertebralis being uninjured.

HEAD.—The cranium thick, and very heavy; the thinnest part measuring 2½ lines, and the thickest 5½ lines. The great longitudinal sinus was gorged with blood, and so large as to admit with ease the forefinger. The medullary substance of the brain was soft and very vascular: when the section of the centrum magnum ovale was made, it was found studded with drops of red blood; nothing else was observed until an attempt was made to remove it; it was then found impossible to pass a knife through the foramen magnum, to make a section of the medulla oblongata. The brain was, however, removed; and it was then ascertained that the foramen magnum was so much contracted, as scarcely to admit the point of the little finger. On closer inspection, and after dissecting off the dura matter in this situation, the constriction was evidently produced by the odontoid process of the axis being much larger than natural, and projecting, in a conspicuous manner, upwards towards the base of the brain, and backwards on the medulla oblongata, which, from the little that was attached to the pons varolii appeared small and nearly flat. By applying the saw at the posterior margin of the foramen magnum, and carrying it obliquely forwards and upwards, a section of the base of the cranium was now made for the purpose of ascertaining the exact condition of the odontoid process, and the beautifully arranged ligaments in this situation. The section being completed, and a little dissection made, it was ascertained that the whole of the cervical vertebræ, from the atlas down to the seat of dislocation, were completely anchylosed. Not the least vestige of ligamentous structure could be observed, with the exception of the capsular, and occipito-atlantal ligaments, forming an articulation between the occiput and atlas; and of these, the capsular ligaments and synovial membranes, when cut into, were found to be so much thickened and altered

in structure, as more to resemble cartilage than ligament, and calculated to impede seriously, if not altogether, the nodding actions of the head, and slight lateral motion, which this articulation permits. No trace could be found whatever of the apparatus ligamentosus, and lateral ligaments, connecting the occiput with the atlas: neither was there anything remaining in the form of the ligaments, which complete the articulation between the atlas and axis: but nature, ever bountiful, had formed a beautiful provision for the absence of the transverse ligament, by an isthmus of bone, extending from the anterior aspect of the odontoid process to the posterior concave surface of the anterior arch of the atlas:—thus, in most respects, answering every purpose for which the transverse ligament is known, although placed in a situation diametrically opposite.

After the usual process of maceration, the bones appeared white, and exceedingly compact in their tissue, and, with the exception of their anchylosed condition, perfectly normal—their form in every respect not appearing to differ from the general characters by which these vertebræ are known.

The most remarkable feature in the whole preparation—and evidently the result of a former dislocation forwards—is the position of the atlas; which, on the right side especially, is pushed forwards and upwards from the articulating surface of the axis, so as to cause the odontoid process to present itself nearly in the centre of the circle of the atlas. A bridge of bone, exactly half an inch in length, and varying from three to four lines in breadth, passes nearly horizontally forwards, from the odontoid process to the atlas, as described above, and connects them together. The axis is also pushed forwards in the same manner from the third cervical vertebra, but not to so great an extent, giving the entire preparation a twisted appearance to the left side. Its length measuring anteriorly, from the superior margin of the ring of the atlas to the inferior margin of the body of the fifth cervical vertebra, is 3¼ inches. The diameter of the spinal foramen of the atlas, from behind forwards, is exactly one inch and four lines, and the transverse diameter one inch and half a line. The odontoid process, instead of terminating at its apex in a point as it generally does, presents a broad and irregular ovoid form, measuring, transversely, half an inch—and from behind forwards, including the bony ridge alluded to, one inch; its length is three-fourths of an inch, and its distance from the posterior arch of the ring of the atlas only four lines.

Remarks.—It may be supposed that, having ascertained the exact nature of this accident, the author of this paper was very anxious to obtain every particular relating to this man's history; and as the *Pique* was still riding at Spithead, he took the earliest opportunity of going on board, for the express purpose of gaining all the information possible; and he has to thank Mr. Deas, the assistant-surgeon, for his kindness in furthering his views on that occasion.

It appears that the man had, for some years past, always been subject to a stiff neck, that he very often complained of rheumatic pains in that region, and of sore throat. He was, nevertheless, a very efficient and active seaman, always doing his duty, and never on the sick list; but was unable to move his head to one side, and was compelled to turn his whole body round when he was desirous of looking either to the right or to the left. It further appears that, at the time the accident occurred, the deceased, although not drunk, was in the state that sailors call "rather fresh," and was "larking" with some of his messmates, and in attempting to catch one of them, his foot slipped, and he fell backwards, his head only SLIGHTLY striking the deck.

Note.—Mr. Stanley has entered into some research for similar cases, and has appended short notices of them to his paper; but we have not space for them here. We hope the medical officers of our naval and military hospitals will not allow the valuable facts that occur in these noble institutions, to slumber in comparative oblivion among the records of the past.—*Ed.*

ADDENBROOKE'S HOSPITAL.

Clinical Contributions from Addenbrooke's Hospital, Cambridge for the Years 1836-37. By H. J. H. Bond, M.D.—(Continued.)

Diseases of the Stomach and Intestines.

The cases of diseases of the stomach and intestines, taken collectively, amounted in the years 1836-37, to 13.89 per cent. of the total admissions during that period: the respective aggregates of cases entered as affections of the stomach and as affections of the intestines being nearly equal. The data for determining the proportion of male and female, and of town and country cases exist only for the year 1837, from these it appears that 9.03 per cent of the male, and 20.12 of the female admissions in that year, and 13.68 per cent. of the cases from the country and 16.25 per cent. of those from towns appertained to this class of affections.

Diseases of the Stomach.

Cases entered in the registers under this title during the two years, amounted to 6.69 per cent. of the total admissions; and in the year 1837, 3.67 per cent. of the male, and 9.54 per cent. of the female cases were of this description.

The results of an analysis of the cases of stomach affections under the charge of the author, and of which the notes were preserved, seemed to correspond best with that classification of gastric disorders, in which they are referred to the two following divisions—the 1st, in which the gastric disturbance is unaccompanied by any excess of blood or augmented circulation in the stomach, and the 2nd, in which lesion of the gastric circulation, from simple congestion or hyperæmia to inflammation of the mucous membrane, including the products of such lesion, viz. disorganization of the gastric tissues, constitute the principal element of disease.

The reference, however, of each case, to one or other of these divisions was not so much determined by the absence or presence of particular symptoms conceived to be expressive of vascular derangement of the stomach, as (in accordance with the less exclusive views which have prevailed since the doctrines of Broussais have received the correction of more general experience) by the predominant and collective character of the symptoms; and more especially by the result of the modes of treatment employed, the real touch-stone, as Andral expresses it, of the nature of the disease in this class of affections.

First Division of Gastric Affections, or Cases of Functional Derangement of the Stomach, unaccompanied by any Symptom denoting Excess of Blood, or excitement of the Circulation in that Organ.

General Statement.—The cases in the general practice of the hospital, registered under the title of dyspepsia, making allowance for some latitude of diagnosis, were probably for the most part of this description, and the following is the numerical statement of them—5.96 per cent. of the admissions in the two years were entered as cases of dyspepsia: 3.08 per cent. of the males, and 8.42 per cent. of the female patients being dyspeptics, also, in the year 1837, the proportion of town and country cases of dyspepsia to the respective totals of town and country admissions being nearly equal.

Analysis of Cases.—In the present division are included 101 cases under the author's care, in which the principal morbid phenomena referrible to the stomach consisted in impairment or perversion of its digestive functions, with

derangement of its sensibility—admitting of a further sub-division, according as in addition to these states, there existed perversion of its muscular actions, producing frequent retching or vomiting, but still unattended by any other symptom denoting vascular excitement. It is probable that a still further distinction of cases in reality existed, in reference to the absence or presence of morbid secretions of the gastro-mucous membrane—but there was no certain guide in the symptoms to denote this distinction; or at least, such a state of the secretions, if recognizable, appeared incidental to any form of the disorder; whereas the occurrence of vomiting as a frequent and prominent symptom seemed to mark an affection of a nature distinct from the other more simple form.

Impairment or Perversion of the Digestive Functions was in these cases denoted by,—1st. Derangement of the appetite, which was present in more than two-thirds of the 101 cases, either as total anorexia with aversion to food, or diminution of appetite with disrelish of or indifference for food, or capriciousness of the appetite shown either in the choice of particular articles of diet, or in the alternation between a desire and disinclination for food, or lastly, a more or less constant craving for food, its ingestion not being followed by satiety.

2dly. Excessive development of gas in the stomach: which occurred in nearly a third of the cases, either indifferently during fasting or digestion, or at various intervals from immediately after ingestion of the food, till the completion of the gastric digestion—this symptom occasionally was the most prominent and urgent of any.

3dly. Disturbance of the functions or sensibilities of other organs supervening or becoming aggravated during digestion.

Derangement of the Sensibility of the Stomach.—Granting that pain or disordered sensations referred to various regions, but all in the vicinity, in the stomach and for the most part connected with other morbid phenomena plainly originating in the stomach, denote modifications of the sensibility of that organ; this was by far the most constant morbid condition met with, as it is recorded in 87 out of the 101 cases: with regard to its locality, the most frequent was the epigastrium, next in frequency the left hypochondrium, and nearly as frequently the sternum, especially towards its lower extremity; in connexion with pain in one or other of those situations there occasionally existed uneasy sensations or positive pain in some parts not corresponding to the stomach and beyond the abdomen, as between the scapulæ or the portion of the back opposite the epigastrium: in one instance the most urgent complaint was of pain referred constantly to the *vertebra prominens*, which disappears with the gastric disorder.

With regard to the morbid character of the sensations felt in these situations, the epigastrium more especially, while a considerable number complained simply of pain, others again assigned some peculiar character to the morbid sensation, such as aching, smarting, gnawing, nipping; in some the attacks were violent and spasmodic; in others there was a sensation of weight; in others again of heat; in a few on the contrary of cold in the region of the stomach; others again denied having any pain, and complained only of an indefinable uneasiness or distress at the epigastrium. But these modifications of sensibility seemed to occur indifferently in any of the varieties of the disorder, and perhaps were rather different modes of describing pain, than real differences of sensation. One only of the characters assigned to the lesion of sensibility deserves more particular mention, both from its very frequent occurrence and from the direct evidence of its being referrible to the stomach, and this was the sensation of *sinking*—this, it is well known, is the most common expression given by a large proportion of invalids to the sensation they experience at the epigastrium; and Dr. Beaumont states that this was uniformly the sensation felt by Alexis St. Martin, when the tube was introduced by the external aperture into the stomach during its empty

state, and when the gastric juice flowed in more than ordinary abundance. Besides these various morbid sensations, which frequently occurred independently of ingesta in the stomach, and sometimes indeed, were relieved by ingesta of any kind, there was the additional symptoms in many of a sense of load or oppression after a meal of ordinary or less than ordinary quantity. One instance may here be alluded to, of a singular description of morbid sensibility, evinced by an uncontrollable avidity for drinking cold water.

Sensibility to pressure in the epigastrium, seldom amounting to tenderness but still more than is natural, was present in about a sixth, excluding those cases in which this might have been produced by the efforts of vomiting; leeching and counter-irritation was not found to be more frequently of service in these instances than where such symptom wa absent, which would intimate its independence of the vascular condition of the stomach. In several cases the patients complained of a fluttering or pulsation at the epigastrium or left hypochondrium, and occasionally such pulsation was perceptible to the touch.

Conditions of other Portions of the Digestive Canal.—Next to the symptoms proceeding from the conditions of the stomach itself, may be noticed those appertaining to other portions of the primæ viæ.

And first with regard to the tongue: for the most part its appearance was rather typical of the general state of the patient's health, and to be viewed as a complexional feature than taken as an index of the immediate condition of the stomach: since it was rather in its form, textural colour, and degree of firmness, its tension, flabbiness, or tremulousness than in the varieties of its secretions, that it was included within the range of morbid phonomena; and its 'return to a normal condition was not so often coincident with the removal of the actual gastric disorder as contemporaneous with the more gradual restoration of the other elements of health, as of the complexion, embonpoint and muscular strength: indeed, in many instances, it seemed to be the most reluctant to yield of all the morbid states, and to persist, when the return to health in every other respect was complete. It may be added, however, that whereas, in this division of cases (from which those are excluded in which increased vascularity or inflammatory action of the stomach was supposed to have been present) those appearances of the tongue denoting, as it is believed, an inflammatory state of the stomach, as red and elevated papillæ, general redness, or a central streak of redness, were very seldom though occasionally observed. On the contrary, paleness of the surface was very frequently noted, and instead of dryness, more often an excess of moisture or halituousness: and whereas a thick dirty white fur is the most ordinary condition of the tongue when hyperæmia or inflammatory action of the stomach occurs; under the present form of disorder a slight, slimy, mucous covering, or merely a whitish appearance of the villi without any secretion of fur, was for the most part remarked. The condition of the gums and the mucous membrane of the mouth and fauces generally, like that of the tongue, was rather a feature in the general physiognomy of the disorder, than a symptom varying with the phases of the gastric derangement. The morbid sensibility of the stomach seemed occasionally to extend to the œsophagus, as from its nervous association might be anticipated: while in the peculiarity of its morbid sensations the nature of its function was still represented, as when the patient complained of a sense of choaking when nothing was present in the œsophagus; or of a difficulty in the passage of ingesta when there was no obstruction.

But proceeding in the opposite direction from the stomach, as the centre from which the disorder emanated, the remainder of the canal was in a more positive manner implicated in the functional disturbance—a necessary consequence, since any failure in the integrity of the gastric functions unavoidably entails upon the intestines an imperfection in theirs—but obvious as this is, the want of duly

appreciating so simple an inference and rightly interpreting the nature of this aberration of the intestinal functions, has, it is to be feared, led to a serious mistake in practice, and an injudicious routine treatment been thereby adopted in the management of these every-day cases—in which, notwithstanding there is much room for caution and discrimination, if a speedy or secure recovery is to be effected, or an economical use of the dispensary be desirable. Affusion is made to the engrossing use of purgatives in every case in which torpidity of the intestinal canal is present; such a condition once or in any degree ascertained to exist, being immediately stamped as the "head and front of the offence," and made to suggest one invariable indication for treatment. But to return to the cases under consideration.

In the first place, other portions of the abdomen besides those corresponding to the region of the stomach, were not unfrequently the situation of pain or some morbid sensation without any accompanying inflammatory character, but which seemed to indicate either an aberration in the reference of gastric sensation to distant parts, or an extension of morbid sensibility to other tracts of the intestinal canal, or to the associated organs, as the liver or spleen: thus pain or a stitch in the right hypochondrium, spasms or aching in the umbilical, lumbar or iliac regions, were among the most ordinary complaints made by the patients, without their occurrence often furnishing any precise clue to the detection of functional disturbance of the subjacent organs. Sensibility to pressure was likewise, as in the case of the epigastrium, occasionally present in the hypochondria or in other portions of the anterior aspect of the abdomen, but not obviously connected with any alteration in the vascular condition of the viscera beneath. Pulsations also, either as internal sensations or recognizable by the touch, were met with, but rarely, in the umbilical region.

But if these symptoms of morbid sensibility existed independently of any inflammatory character or vascular congestion, it was seldom but they were accompanied by some derangement of the intestinal functions; though, as they did not generally subside with their returning integrity, they could scarcely be regarded as the result of such derangement. Unquestionably the most frequent form of intestinal derangement was costiveness, as this occurred in a noticeable degree in 50 out of the 101 cases, and either from its amount or duration was a prominent symptom in about a 4th. But that this condition of the bowels was but secondary to the gastric disorder, or its consequence and not its cause, was evident by its removal being thought necessary to, yet not conclusive of the restoration of the functions of the stomach; indeed sometimes the measures found requisite to overcome the constipated habit, occasionally left the stomach in a state of still greater distress, to alleviate which an opposite mode of treatment and a different regimen were demanded; the sinking at the epigastrium being very often the residual aliment which by its irksomeness still maintained the patient in the condition of an invalid. In some, but comparatively few, cases, diarrhœa was the form of the intestinal disorder, while the gastric affection appeared the same as when constipation was its accompaniment. In about the same proportion of cases, alternations between constipation and diarrhœa, and in general an irritable state of the canal was associated with the stomach affection: but this was of more frequent occurrence where vomiting was the additional element in the latter disorder. Occasionally a spontaneous and smart diarrhœa relieved the stomach and led to recovery. Inordinate evolution of gas in the intestines was rare, which distinguished these cases from that form of hysteria in which this symptom is so common and is attended with impairment of the gastric function.

Conditions of other Organs and Systems.—This concludes the general statement and history of symptoms immediately connected with the stomach and organs functionally associated with it; but the ramifications of disorder were confined

within no such narrow limits as these, but in many instances were coextensive with the entire organization, implicating more or less every system and function. It is from losing sight of this latter circumstance, viz that the derangement of other and distinct functions is but a consequence or extension of the original gastric disorder, (which is still retained as the substratum and course of the general disturbance,) that cases such as many of those forming the subject of the present analysis, in their course and progress, come to have a different and various nomenclature assigned them: whereas if the present view be correct, they continue properly the same, the essence of the disorder being still the impairment of the gastric functions, and the adventitious derangement of the general health being merely its various phases—induced either by the nature of those external conditions, which as predisposing causes originated the gastric disorder, and at once impressed upon it that deleterious quality by which the whole organization speedily resents the mischief at the source of all healthy assimilation and nutrition—or resulting from the protraction simply of the gastric derangement and ensuing extension of its consequences. But this is to anticipate what will hereafter occur to be considered at more length: and mention is here made of this part of our subject merely as furnishing the apology for presenting the reader with a formal clinical communication on a topic so hackneyed as functional disorders of the stomach; which has been done on the grounds that many cases are practically as well as nosologically divorced from this class of affections, and have various names assigned them, as cachexia, anæmia, amenorrhœa, cephalalgia, and a separate department of therapeutics devoted to them, when essentially they are one and the same disease under different aspects and at different epochs.

Permanent Disorders of other Organs and Systems resulting from and complicating the Gastric Affection.

That the fact is as stated in the last paragraph, appears from the circumstance that in all the cases included in this analysis—in a large proportion of which the most serious amount of general disorder, confirmed cachexia with alteration of the tissues of the body, existed so long as to incapacitate the patients from following their occupations in life—the same gastric disorder, identical in its features with its simple form, was present from the beginning, continued throughout as an undercurrent but sustaining malady, and that its removal was the condition and first step in the general amelioration of the health.

To trace, independently of the merely sympathetic affections, what were the ulterior and permanent changes induced in other organs and systems, or, as in other instances, what was, at an early period even, the pernicious influence exerted by a malady, ordinarily so little alarming although so tedious, over the rest of the organization, will belong more properly to the exposition of the various predisposing causes and external conditions of the organizations under which the disorder arose, and which rendered it productive of such results; but it may be proper here so far to touch upon this part of the subject as to state, that among these ulterior changes, the foremost appeared to be a disturbance of the circulation, originating probably in the impairment of the assimilating powers of the stomach, which at the centre of the vascular system produced a succession of morbid phenomena, such as distressing palpitation, aggravated dyspnœa, anormal sounds of the heart, oppression at the chest, faintishness or even syncope—in the course of the circulation, throbbing of the arteries—in its capillary termination, paleness or discoloration of the tegumentary or mucous tissues—and within the province of elimination, caused the serous habitus to be exchanged for more or less of serous infiltration or effusion in the cellular tissue of the face or extremities—and as a corollary of such disturbance of the circulatory functions, a want of firmness and tension in the solids of the body, or a loss of volume, if not emaciation. With this, a train of nervous

symptoms, such as a more entire prostration of strength, with tremors of the tongue and lips, and hands; almost invariably distressing headache and vertigo; and a listlessness, more incapaciating even than weakness or positive suffering. As uniformly again impairment, in one form or another, of the menstrual function.

Such is a mere outline of the general disorder, induced by the derangement in the first instance of the gastric functions, in consequence either of its protracted duration or bad management, or from its having originated from such predisposing causes or under such pernicious circumstances in regard to habits, regimen, critical periods of life, and social conditions, as to impart to a malady, simple and controllable when not fostered by untoward accessories, an inveteracy and diffusiveness, capable of speedily producing baneful changes in the entire organization. The further illustration of these effects under especial agencies, resulting in the production of such conditions of the health, as have been distinguished conventionally by particular nosological terms, will presently be considered. In the mean time, as was stated in the early part of this communication, the occurrence of vomiting as a prominent symptom, seemed to denote a distinct form of the disorder, inasmuch, as besides the characteristics of morbid sensibility and impairment of the digestive functions, it imparted to it the attribute of extreme irritability, and the intolerance of the mere presence in the stomach of ingesta of any kind: but this as well as the other forms occurred equally when the constitution had not, as when it had become implicated, and while it indicated an increased intensity of the gastric affection, its occurrence did not seem materially to affect the chances or progress of further mischief in the rest of the œconomy; sometimes indeed it was surprizing how little disturbance resulted from its long continuance; in two instances a smart attack of bilious vomiting terminated the disorder: in two other instances, however, already alluded to, the severity of the vomiting and its association with intense headache were the grounds of apprehending some grave cerebral disease, which the issue alone disproved. Although it is to anticipate the subject of treatment, it may be here stated, that in one case the vomiting, when attended with headache promptly ceased on cupping the occiput.

To return to the consideration of the implication of other and distant organs and systems in the disturbance of the chylopoietic viscera—a distinction may be here made *in limine* between the merely transient and sympathetic affections, and the real extension of functional derangement and lesion of nutrition to distant parts of the organization. The first it may be sufficient just to enumerate as the usual accidents in dyspeptic cases.

Sympathetic Affections.—The pulse, in those instances in which the affection had not made such inroads on the constitution as to have induced permanent derangement in the balance of the circulation with its ulterior effects on the organs and textures of the body, was still, more often than not, above its ordinary standard of frequency; in some instances the disorder had begun by an attack of ephemeral fever, and more often in its course was attended with a slight febrile movement at some period of the day: palpitation likewise was not a rare occurrence among the same division of cases.

Dyspnœa and cough generally unaccompanied with expectoration, were among the most frequent of the sympathetic affections, but in which auscultation furnishes only negative results.

The lithic diathesis, irritability of the bladder betrayed by frequent micturition, scantiness and scalding in the passage of the urine, were among the rare and occasional symptoms—high-coloured urine was probably oftener present than noticed.

The encephalic organs were a common seat of morbid phenomena—the most frequent of which was headache; excluding still those cases in which the nervous

centres with other systems had become more seriously and permanently interested in the general disorder of the health. Sometimes this was the most urgent complaint: when attended with vomiting, it evidently was immediately dependent on the actual state of the stomach at the moment; at other times, by its intensity, duration, and its being accompanied by other cerebral symptoms, some fears were entertained that the brain might be the seat of the primary disorder and the stomach only secondarily affected, in which case the result alone could correct the diagnosis. Next in order of frequency, among the sympathetic cerebral symptoms, was vertigo; and occasionally there was a sense of weight in the head, especially in the occiput, with drowsiness or a distressing noise in the ears. Among nervous symptoms not confined in their seat to the head, were heaviness of the limbs, aching of the legs, and occasionally numbness of one side or in the præcordial region. In one instance a neuralgic affection of the 5th pair preceded the debut of the gastric disorder—a loss of strength or muscular power was early a very common complaint, and also one much insisted upon by the patients even after the urgency of the gastric symptoms had been removed. Low spirits, mental disquietude respecting their malady, persuasion of benefit to be derived from particular remedies, increased susceptibility to moral impressions, might also be enumerated among the occasional sympathetic affections. Various anomalous sensations, which would often fasten on the notice of the patient, it would be useless to dilate upon.

Such were the most ordinary symptoms which occurred as the accompaniments of the gastric affection—the reverberation rather of the central disorder in distant parts of the system than its actual propagation to these parts—and thus far a description merely has been given of the most ordinary in all complaints, familiar in its features and history to every practitioner, easily recognized in every case, at once pronounced to be dyspepsia, and dismissed accordingly with some favorite formula of prescription ready at hand for such patients—and indeed little excuse could be found for occupying the pages of a periodical with a communication of so little novelty, where no claim is made to any therapeutic discovery, beyond its title to be a sketch from the life, or an analytical reduction of cases to a general statement; and in a statistic respect to its being a representation of the frequent occurrence of a form of disorder—more commonly insisted upon as the compensating penalty for the possession and use of the luxuries of life and abundance—among a class of people whose social condition precludes the supposition of such an origin of the disorder, suggesting rather one of an opposite character. But such an exposition of this common form of disorder would not have been introduced except for the ulterior purpose of showing that it was the germ, the latent and abiding cause of a series of morbid changes, which produce extensive havoc in the constitution; and that its frequency and persistance and its consecutive evils maintain no inconsiderable portion of the lower orders in this district, at least the female part in a state of prolonged ill health, and constitute a heavy tax on the funds provided for their support.

Predisposing Causes of the Gastric Affection; and circumstances and conditions modifying its nature and consequences.

It was chiefly however from being enabled to trace in the records of the cases, forming the subject of this communication, notices of such circumstances as seems to have been the predisposing or sustaining causes of the disorder, that these preliminary remarks have been offered on the form of the gastric affection itself and the attendant or consecutive derangement of other organs or functions. So large a proportion of the cases of a provincial hospital being of the above description, and no inconsiderable amount of the sufferings of the class of persons seeking hospital relief being derived from this source; it would have been

scarcely sufficient in a clinical report to have stated merely, that the prevailing disorder was that of functional disturbance and morbid sensibility of the stomach, producing more or less frequently, serious derangement of the general health; especially when the purpose was to show, that there must exist something in the social condition or habits of this class to account for a great preponderance among them of a particular form or family of disorders. And such a previous history seemed the more called for, inasmuch as in most of the treatises on dyspepsia, this malady is represented more especially as the consequence of modes of living from which the greater number of the subjects of the present cases were excluded by their position and circumstances: for, if in some of the present cases, the causes of functional disorder of the stomach were referrible to abuse of its functions or to excess, as in a majority of the instances in other ranks of life; in not a few of them the opposite condition of insufficient nourishment might be assigned as the predisposing cause; but in by far the greater proportion, circumstances, interesting the whole organization but interfering especially with the due performance of the gastric functions, without any directly noxious cause acting on the stomach itself, originated and maintained the disorder.

While therefore the gastric affection, such as it has been described, remained the same for all the cases, and the general mischief to the system was such as has been delineated, the cases admit of being further reviewed under three subdivisions, according to the predisposing conditions of the system or external producing causes, to which it seemed reasonable to attach the disorder. It may be premised that, as more than nine-tenths of the cases were of females, the causes, whatever they may have been, must have had a peculiar relation to the physical or social condition of the sex.

Abuse of the Powers of the Stomach.—In the first subdivision then, those cases are included which were referrible to abuse of the powers of the stomach, including the ordinary causes of indigestion; as intemperance or the use of unwholesome food, and not unfrequently an abuse of the stomach of a different nature, viz. the habit of overdosing with domestic medicine. The first, as might be expected, was most common among the male, and the latter among the female patients. As the case of this subdivision presented nothing peculiar, they need not be insisted on; a short notice may however be here introduced of one instance, for the purpose of showing how intolerant the stomach may be, even when itself not the seat of any particular disorder, of an ordinary article of food, where the general state of the system in chronic maladies renders ordinary diet inappropriate. An hospital patient had for months been confined to the horizontal posture for a severe and tedious disease affecting the osseous structure of the pelvis, but from which he was slowly and unexpectedly recovering, when one day he was attacked with erysipelas of the lower extremity, and, the day after the febrile accession which ushered in its attack, he was seized with vomiting, and rejected from the stomach an oblong white concrete substance, about three or four inches long and nearly an inch broad, which on examination proved to be a mass of cheese kneaded together by the motions of the stomach: cheese not forming an article of the hospital diet, it was found on enquiry that ten or twelve days previously he had eaten some cheese brought to him by a friend, and none in the interval—the erysipelas soon disappeared after this accident.

The practice of taking purgative medicine in every indisposition, slight or serious, previously to taking medical advice, has become the prevailing habit among the females of the labouring classes and domestic servants, and is almost regarded by them as one of the necessaries of life. Epsom salts taken in doses of an ounce at the time being the drug almost universally employed. This domestic remedy with perhaps the scarcely less injudicious drugging administered by unlicensed practitioners, the author is persuaded is a frequent cause of the

disorder under review, among persons applying for hospital relief; and in not a few of the present instances it has been possible to trace it to this source. It would be quite needless to insist here upon the pernicious tendency of such a habit, and of its peculiar liability to weaken and derange the powers of the stomach. It is to be lamented that the misdirected benevolence of the better-informed should increase the evil by furnishing similar means for undermining the healths of the applicants to them for relief.

Insufficient or Innutritious Food.—A second subdivision of the cases admits of being formed, in which food, insufficient in quantity or deficient in nutritious quality, considering the degree of exertion or exhaustion entailed on the patients by the nature of their occupations, might be assigned as a predisposing cause.

Although few if any of the cases could be said to be solely attributable in their immediate origin to impoverishment of diet, yet investigation into the circumstances of many of the patients rendered it highly probable that this cause existed among others, and, with the concurrence of other circumstances, mainly contributed to the production and continuance of the disorder.

As the object of these Contributions embrace the statistical relations of the subjects treated of, it may not perhaps be irrelevant to introduce here a brief statement, to show how the labouring classes in this district are circumstanced in respect to diet, although there may not exist much difference in this point from what is the case in other parts of the country. It may be remarked then, that the families of the poor resident in the town of Cambridge are so far differently circumstanced, if not from the population of other towns at least from the surrounding agricultural population, that they are enabled to procure good animal food at a very reasonable rate, so as most frequently to have a dinner of butcher's meat three times a week; whereas the families of the poor in the villages scarcely ever procure any animal food except bacon, and that but rarely, so as to furnish little more than one meal in the week. This distinction arises from a circumstance peculiar to the town of Cambridge, in that for the greater portion of the year, during which the members of the University are in residence, large quantities of broken victuals, the perquisite of college servants, are sold at comparatively a very cheap rate. In contrast with this condition of the townspeople, a statement is subjoined of the quantities and nature of the articles of food consumed, taken indifferently from different villages, in the county.

A family, consisting of man and wife with seven children, 15s a week, being earned by the father and eldest son.—Weekly consumption. Three stone of flour, three pecks of potatoes, 1½lb. of cheese, 1½lb. of pork, ½lb. of butter, 1½ oz. of tea, 1lb. of sugar.

A man and his wife with four children earning 9s. a week.—Weekly consumption. Three pecks of brown bread, ¼lb. of butter, ½lb. of sugar, and ½ oz. of tea. The husband has his breakfast in the fields, consisting of some milk of his master's with his own bread—at dinner has some small beer of his master's—less than once a week a little broth or milk for the family from the minister.

A man and his wife with one grand-child, husband earning 8s. a week.—For breakfast the husband has a mess of water-gruel with bread, the wife a little tea with bread. Dinner, pork with potatoes and bread, no beer—for the evening meal, the wife has tea with bread and butter and the husband bread and cheese with tea—the child a "mess with water out of the kettle"* for its meals. Weekly consumption, 1½ stone of flour, 2lb. of pork, ¼lb. of butter, ¼lb. of cheese, potatoes from their own garden—1 oz. of tea.

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* Boiling water poured over bread, with sugar added, and sometimes dripping given them by the farmer, is their ordinary mess; their gruel is made of wheaten flour and water.

Husband and wife and one child,—Weekly consumption, 1 peck of flour, ¼ peck of potatoes, ¼lb of cheese, ½ or ¾lb. of butter, ¾lb. of sugar, 1 oz. of tea, 2 oz. of coffee—about twice a week pork for the husband only.

It is not here insinuated that this almost total absence of animal food contributes to render the agricultural population more ailing than it otherwise would be, any further than that it does not provide for the contingencies of original delicacy of constitution, trying circumstances from critical periods of life, severe labours and other predisposing causes of the disorder, to be considered in the next sub-division, and thereby contributes to retain the less robust portion of the population more frequently and longer among the ranks of the sick than if their circumstances admitted of greater latitude in the adaptation of food to pressing exigencies. It is not within the scope of the present subject to consider whether it would at present be judicious or practicable to make a diversion of a portion of the funds provided by benevolence or otherwise for the poor to this purpose; but it is certain that it is both a waste and a mockery to be liberal of the resources of pharmacy when no means are devised for better provisioning the cupboards of the poor. These remarks apply almost exclusively to the laborious yet feeble mothers of families residing in country villages, who constituted a large portion of the subjects of the present cases.

Conditions of the System Generally, Interfering with the Gastric Functions.—In the third subdivision those cases are included in which, without either abuse of the powers of the stomach and independently of any insufficiency of diet, the conditions of the system generally from internal or extrinsic causes were unfavourable to the due performance of the functions of the stomach, and therefore originated disorder of that organ. These conditions were various, of which the following may be adduced as the principal.

1. Original delicacy of constitution. To those placed under domestic circumstances requiring the same exertions with others possessing ordinary stamina and yet not having the means of more generous living, especially if mothers of families, this constitutional delicacy is a severe trial, frequently entailing on them that atony and trouble of the digestive functions which is matured into a confirmed state of gastric disorder; on enquiring of such persons the origin of their complaints, the general reply is that they have been ailing for years, and yet they present no signs of organic disease; such become frequent pensioners on the hospital, returning to be cured of their "old complaint," and their appearance bespeaks them aged beyond their years.

2. Particular epochs of life—as the debut of puberty or the constitutional effort towards the establishment of the catamenia—and the climacteric period. At both these epochs, the habits and ordinary hardships of females of the poorer classes tell upon the constitution with more than ordinary force, and the stomach seems the first to resent the ill-conditioned circumstances to which the entire organization is subjected.

With respect to the former of these epochs, its usual coincidence with the period of first going to service, the exchange at that critical time of the country air for confinement to the house in a town and of the lighter occupation of aiding a mother in her domestic duties, to the greater and more continuous efforts of a "maid of all-work," may be assigned as causes which prejudice the assimilating powers of the gastro-intestinal organs, at a time when their integrity and vigor are more especially required to meet this new effort and demand of the constitution: a sixth nearly of the cases, domestic servants living in a town, were of this description. The change of diet, although for the better, proves by no means the compensating advantage it might otherwise be, were it not for other changes more inimical to the economy: indeed such alteration of diet may rather prove prejudicial by unseasonably imposing a new habit on the stomach. The gastric disorder presented in these, for the most part, the same features as in the other

classes of patients, but was oftener attended with vomiting; and, whereas, with the rest, constipation was much more frequently the habit of the bowels than diarrhœa, with them the latter condition was as commonly met with as the former. The resulting functional derangement of other organs and systems was the same, and presented the same varieties as appertained indifferently to all exhibiting that condition of the economy which has latterly acquired the name of anæmia, and which will be considered more at length hereafter. It may be remarked, however, that not only was the elaboration of the catamenia, under the unfavourable circumstances above insisted on, rendered effete and difficult, but that the effort itself seemed often to have been postponed to a later period from the same causes, and especially precocious labour.

The second, the climactric epoch, marked by the decline of the catamenial function, seems also especially favorable to the occurrence of the disorder: about one third of the cases of married females affected with the gastric affection being so circumstanced—with these likewise, as with the last mentioned, it was characterized by irritability as well as morbid sensibility of the gastro-intestinal canal; retching and vomiting being more frequent with them, and diarrhœa oftener taking place of the more ordinary condition, constipation. With respect also to the general derangement, not uncommonly its features during this decline of the catamenia very much resembled those which characterized the disorder when incident during the immaturity of the same function; and especially as regards phenomena denoting the implication of the circulating system and which have already been delineated. Unfortunately the resemblance does not extend to a corresponding susceptibility of alleviation from remedies; a difference very conceivable, since at the later period when the arterial system has lost its pliancy any disturbance of the circulating powers must present a much nearer approach or affinity to structural alteration than at the early age when the vascular system however deficient in tone retains its physical integrity.

3. Another by no means infrequent predisposing cause of the malady among the same class of persons, although not incident to many of the present cases, is undue lactation; *i. e.* lactation maintained under unseasonable circumstances as to health or constitution, or oftener, protracted beyond a seasonable term: from one and a half year to two years is not an uncommom period among these persons to continue nursing. The stomach, however inadequate for a period to perform its part in elaborating nourishment beyond the wants of the individual economy, is the first to "strike" when this imposition of extra-duty is too long demanded of it: it is not surprising therefore that among such females "dyspepsia lactantis" so frequently occurs. The sinking at the pit of the stomach is with them the most prominent symptom, but most of the phenomena already described are liable to be associated with it: though the instances that have occurred to the author have not exhibited that extreme disturbance of the system which has occasionally arisen under the agency of other predisposing causes.

4. Another circumstance, which from a review of the cases, appeared obviously to have been the origin of the complaint in several, was the precedence of some acute disease or of some exhausting accident, as abortion. The mode, by which such antecedents predisposed to the gastric disorder as a sequelæ, was by a premature return to the usual avocations and exertions during incomplete convalescence. Acute diseases are more commonly converted into chronic affections of the like nature, among the poorer classes on this same account: but without this result ensuing, the health is liable to continue impaired or insecure, from time not being allowed to the stomach to be properly reinstated in its powers; since the reparation of the exhausted system is a sufficient tax upon its energies, even in repose: and this it may be inadequate to, if it has at the same time to meet the demands of renewed activity in the muscular system. In several instances the disorder was traced to convalescence from scarlet fever and acute rheumatism; nothing however is more frequent than for hospital patients to

complain that they have never "had their healths" since they were subjects of such and such acute malady—and it will be found that a large proportion of patients making this complaint are sufferers from gastric derangement of the kind under consideration; too early dismissal of patients from the wards of an hospital, or the making out-patients of convalescents, thus often becomes the means of draining the funds of the institution by converting them into pensioners on its resources.

5. It might be expected that the presence of some morbid diathesis, as that of scrofula or phthisis, should have in several of the cases been coincident with the gastric disorder, and indeed, in some instances, the gradual development followed by the advanced stages of phthisis was observed to ensue upon the functional derangement of the stomach. Without insisting too much upon the presence of such a diathesis as a predisposing cause of gastric disorder, it appears certain that the stomach is often the earliest to betray the existence of some "fault" in the constitution. In several of the present cases tuberculation of the lungs seemed to be imminent, when not yet declared by any certain physical sign.

Under this head may be mentioned another, the aguish diathesis, if it may be so termed, as being in some way connected with the occurrence of the gastric affection. In some cases ague had simply preceded it, but in others no regular intermittent was at any time formed in the course of the affection, but distinct paroxysms simulating ague, would occur at irregular intervals; occasionally again, where no actual exposure to malaria could be supposed to have occurred, ague would at an advanced period of the gastric disorder for the first time make its appearance. In all these instances probably the patients came from aguish districts or had been the subjects of ague at some former period of their lives; is it possible, however, that the gastric disorder may sometimes be a latent form of intermittent?

6. As in other disorders, so likewise in this, the habit of the disease itself sometimes acts as a predisposing cause of its recurrence; at least in some of the cases the statements of the patients seemed to indicate this, viz. alleged returns of the complaint at various periods without any obvious exciting cause, and with intervals of ordinary health. It is to be noted, however, that such is the early history of persons in whom organic disease of the stomach is subsequently developed.

7. A state of the system still remains to be considered, which in by far a greater proportion of the cases, *i. e.* 40 out of a 101, occurred as the predisposing cause of the primitive gastric disorder. It was that state in which, in the progress of the complaint, those characters, and combinations of symptoms were presented, which collectively have acquired the nosological distinction of anæmia, chlorosis, and frequently the more exclusive one of amenorrhœa. This section of cases has been reserved for the last, inasmuch as to substantiate their claim to be comprehended among the other instances of gastric disorder, required something more than their bare enumeration. The cases referred to, (exclusive of those already considered when treating of commencing puberty as a predisposing cause, and with which they presented the greatest similarity) were all of unmarried females under the age of 30, 28 out of the 40 were resident in tow ns and three fourths were domestic servants, and of the remainder, several we re milliner's apprentices; in all these there existed, in quite as much prominence as in the other instances, the symptoms of gastric disturbance that have been detailed in the foregoing pages, and which, abstracted from their complexional characters, constituting the title-page of the so-called disorders, anæmia, chlorosis, &c., would still have entitled them in any arrangement to be classed with gastric affections, and to have passed current as dyspeptics; and in every case nearly the first notice of returning health was the improvement in the gastric functions. With regard to any peculiarity in the gastric or intestinal disturbance distinguishing them from the rest, little is to be remarked; retching and vomit-

ing were much less frequent; pain in the left hypochondrium perhaps more common, while constipation in degrees varying from torpor of the bowels to obstinate costiveness, frequent among all classes of the patients, was especially so among these; but that this condition was dependant on the gastric affection and not its cause was very clear, from its seldom yielding to mere purgative remedies. It would be a waste of space to enter into much detail of the symptoms of the general disorder, as they are at present so well understood, and have been accurately detailed by Dr. Marshall Hall. It may be noticed, however, that these cases without prejudice to the identity in all of the gastric disorder, and while retaining a marked resemblance to one another in the general derangement, presented three varieties, accordingly as the disturbance in the circulating, respiratory, or cerebro-spinal functions predominated. To the derangement of the functions of circulation, indeed the physiognomy of the entire disease in all, might with propriety be referred; since to this appertained that group of symptoms from which its name, anæmia, was borrowed—as the pallor of the countenance and lips, dark circle round the eyes, the exsanguine appearance of the tongue, gums, and fauces, &c.—conditions depending upon lesion of the capillary functions or the composition of the blood itself; but if these symptoms were more or less common to the whole section of cases, as well as more or less disturbance at the centre of the circulation, as indicated by palpitation on slight exertion, or on first lying down, and habitual acceleration of the pulse. In others the disorder of the circulation was so predominant as to mask the affection of other organs: extreme and distressing palpitation, anormal sounds of the heart, as a bellows-murmur accompanying the first sound, or a sharp and clangorous quality of the second; throbbing of the arteries of the head or of the whole frame; a vibrating, thrilling, or even irregular pulse, frequently full without being firm; in other cases faintishness or actual syncope; more or fewer of these phenomena and in various combinations constituted in many the most urgent and pressing part of the malady, and the palpitation perhaps almost solely engaged the attention of the patient, while in the instances in which there was not this predominance of disorder in the functions of the circulation, the complaint of palpitation was only elicited by enquiry. The bellows-murmur was often the last to disappear of this group of phenomena interesting the apparatus of the circulation. It is such cases as these that are quoted as instances of nervous palpitation, while in fact they still repose upon the gastric disorder as the initiative and sustaining lesion. As an appendage to the derangement of the circulation, an anasarcous diathesis was observable in many, in various degrees, from slight leucophlegmatia of the face and infiltration of the ancles, which was very common, to positive œdema of so considerable extent as when dropsy was regarded as an idiopathic affection would in them have constituted a disease of itself.

The second variety, in which the respiration seemed most prominently implicated in the general disorder, did not include many of the severer cases. Dyspnœa and cough, generally unaccompanied by expectoration, were very frequent; but in some these formed the principal symptoms of which the patients themselves complained: yet it was by no means uniformly, in these instances, that a closer investigation elicited indications of incipient or imminent phthisis; as where it was found that slight hæmoptysis had at some period occurred, or in which auscultation detected feebleness of the respiratory murmur in one or both clavicular regions. The dyspnœa and cough, thus pressed upon the notice of the patient herself, for the most part seemed to depend upon the functional disorder of the heart and blood-vessels which accompanied them

Phthisis, however, did originate in some of the cases during the gastric affection, and was suspected to be latent in several. Hoarseness, partial aphonia, or alteration in the tone of the voice, were occasionally incidental to the disease;

but these probably belonged essentially to the group rather of nervous symptoms than to those proper to the respiratory organs.

The third variety, in which there was a predominance of affections of the head, principally, included a considerable proportion of the cases. Head-ache, indeed was nearly a constant complaint, and vertigo almost as much so: but the intensity and persistance of the former of these symptoms, occasionally, was such as to be the sole complaint made by the patient; and such cases might with propriety have been designated as cephalalgia, if they had not been associated with the gastric affection common to all. In general, these symptoms seemed to depend upon the actual state of the cerebral circulation, as they were most frequent on first rising in the morning, on exchanging, therefore, suddenly the recumbent for the erect posture; sometimes, but rarely, there appeared to be a state of passive congestion of the brain, as indicated by continued drowsiness. With this class of patients likewise, as well as with the others, but not more frequently, there occurred various other symptoms appertaining to the cerebro-spinal system; but which do not merit particular notice. Cramp in the legs was not uncommon connected seemingly with flatulence of the large intestines. Loss of strength, and tremors of the tongue and lips, belong to the share the muscular system had in the general impairment of the health. The state of the tongue, as regards flabbiness, indented margins, creased surface, &c. which has been so much insisted upon by Dr. M. Hall, may be mentioned likewise in connexion with the last-named symptoms; it may be stated, however, that the observation of these different conditions of the tongue, did not confirm the remarks of the author just quoted, relative to their degree and varieties corresponding to the intensity and duration of the general disorder of the health.

It remains to mention the participation of the catamenial function in the general derangement in the cases under immediate consideration—a function, the disturbance of which, in such cases as these, of anæmia or chlorosis, would undoubtedly, at no distant period of the art, have been pronounced as the *origo mali* whenever it occurred. Indeed, with very few exceptions, there was uniformly more or less irregularity of the catamenia: positive amenorrhœa was, perhaps, not more frequent than among the rest who did not present the features of the general disorder just detailed; but scantiness, discolouration and irregularity of the menstrual discharge, was almost in every instance acknowledged by the patients. That this impairment of the catamenial function was but one of the consequences, one, indeed, of the most remote, of the primitive impairment of the digestive functions, was sufficiently, evident; inasmuch as it was in general the last that was restored to its normal state, and the patient would be discharged apparently in the full enjoyment of re-established health, while this part of the economy was still at fault: or its renovation would result as the tardy climax in the series of reinstated functions.*

Having thus completed the sketch of the train of symptoms characterizing this subdivision of cases, the question remains to be solved—if in these likewise the derangement of the gastric functions be admitted as the original and abiding malady, and the source of the ulterior changes in the system—what were the conditions which determined, in these particular instances, the extension of the gastric disorder to take this direction, and to issue in these characteristic lesions of various functions and systems? The class of persons affected, seems to point

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* One of the cases forming the subject of the present communication may be here alluded to as having presented a remarkable idiosyncrasy of the menstrual function, but not singular in the records of medicine. It was of a female, aged about 38, who during her married life, averred that she never menstruated except when she was pregnant, and had never menstruated since she had been a widow.

readily to the solution, viz. domestic servants living in towns, and almost entirely confined to the house; or needle-women, still more rare indulged with breathing the open air; with the aggravating circumstance of habitual sedentariness and confinement of posture—in addition to which, a large proportion of the individuals had not arrived at the period of full maturity of conformation, or such completion had been retarded or postponed beyond the proper term. These circumstances seem to denote that if they were prejudicial to the due performance of the assimilating process where it begins in the stomach, the effects of this initiative derangement must have been peculiarly liable to be propagated, so as to disturb and pervert the whole circle of assimilating and nutritive functions, and especially that of sanguification, by the absence of those conditions of the capillary system of the lungs and integuments, in its relations with the external atmosphere, which both theory and observation show to be most essential to the health of the economy. In other words, the physical circumstances in which these persons were placed were equally prejudicial to the commencement of the assimilating process in the stomach, and its completion in the lungs.

That other circumstances conspired with this predisposing cause, viewed as the principal, is highly probable, when the age of the patients is considered; and they might be such, as bearing on the social habits and moral condition of this class of persons, do not come within the compass of clinical observation to discover or notice.

Treatment.—Thus far then, from the foregoing analysis of cases if correctly represented, it would follow, that functional disorder of the stomach occurs in hospital patients, by no means in the simple form of dyspepsia merely, but has the basis and sustaining cause of a variety of morbid states, which have in general been regarded and treated as separate disorders. To the unity of the gastric affection amidst various complications resulting from the different circumstances under which this primitive disorder originated or was maintained, the attention has been principally invited, inasmuch as it appears most essential, that, in the treatment, this should be steadily kept in view, as furnishing the only rational indication for the choice of remedies for perseverance in their use. The comportment of the gastric affection under any particular mode of treatment being the test of its general usefulness in the restoration of the entire health in every instance. A short statement then of the effects of the remedies employed will terminate this analysis of cases.

Although such cases as the present furnish little that is interesting in the clinical annals of an hospital and may be somewhat irksome from the frequency of their occurrence and their similarity; yet the degree of success attending their management forms a very considerable item in the general amount of service rendered by the institution, and very materially concerns its credit and economy. Unfortunately their permanent cure depends, more perhaps than in any other disorder, on circumstances of regimen, over which the hospital practitioner has a very limited or only a brief control; hence it is, that these patients become the most common pensioners on the funds of public infirmaries; hence also, of the present cases, those treated in the wards recovered much more speedily and entirely, than those who attended only as out-patients who had not the means or opportunity, if they had the inclination, to adhere to proper regimen or diet. In some few instances, indeed, the abandonment of previous errors of regimen was alone adequate to produce prompt recovery, without any aid from medicinal remedies. It is not intended, however, to enter upon the subject of the dietetic and regiminal treatment of the cases: but merely to state, that, with the exception of excluding the use of green or fresh vegetables, the choice of animal or farinaceous aliment in each instance was determined according as the stomach appeared best to tolerate one or the other. With the mothers of families, when subjects of this disorder, little could be effected beyond an alleviation of symp-

toms when their circumstances did not admit of their procuring an increase of domestic comforts, and repose from their ordinary labours. One instance, however, may be quoted, in which a remedy of an opposite nature was found most effectual; the disorder which had long tormented the patient, being speedily terminated by the invigorating influence of gleaning. With domestic servants who numbered at least the moiety of the cases, the treatment was abridged or prolonged, accordingly as they were induced or not to forego service for a time, or in proportion as their employers allowed them the license of exercise in the open air. If the treatment of the disorder should ever engage more than the passing notice of the practitioner, and the necessity of entertaining more enlarged views of its importance in respect to the statistics of medicine, and in its relations to the hygienic state of the community, should be acknowledged; it is certain that any effective control over its extension must depend upon the practicability of improving the habits and condition of the classes chiefly affected by it.

But to proceed to the consideration of medicinal remedies—and, in the first place, of those which are generally regarded as acting immediately on the functions of the stomach—especially bitter infusions—these were never much relied on, and but rarely exhibited, except in combination; and indeed to prescribe them with a view to exalt the appetite of those, who, at their own homes had no means of procuring suitable aliment, would have been of questionable utility; with the addition of alkalies, in a few instances only, did they appear of service, where flatulence of the stomach, with or without acidity prevailed. Of the effects of other remedies, especially hydrocyanic acid and bismuth, the notes of the cases bear more favourable testimony; not as more adequate to their cure, but as controlling very materially the morbid sensibility of the stomach. In the cases in which the acid seemed to be most serviceable, acute pain in the epigastrium during digestion, or craving during fasting, were among the most distressing of the gastric symptoms, and which often yielded promptly to the acid, taken at the instant of greatest suffering, in doses varying from ℥j.—℥iij. of Scheele's acid, and never exceeding three doses in the day: the craving sensation of hunger was sometimes immediately suspended on taking a dose of the acid. In one case, in which the extremely cachectic state of the patient indicated severe inroads on the constitution, the acid was still found a great resource in controlling the epigastric pain: and, occasionally, when sinking at the pit of the stomach was the residuary complaint, after graver symptoms had yielded, this likewise was relieved by the same remedy.

Bismuth seemed to be useful under much the same circumstances as the acid; nor was much discrimination used in the choice between the two; perhaps the bismuth was more efficacious, where, with the epigastric pain or craving, there was flatulence, and perhaps also it had a more direct influence in improving the appetite when deficient. In no instance did it seem injurious, or to cause any unpleasant symptoms.

Both these remedies seem deserving of trial, as capable of affording relief in the numerous cases of gastric disorder, associated with organic disease of neighbouring organs, especially the liver. Hyoscyamus was another medicine, of the class acting on the sensibility of the stomach, which was exhibited; but chiefly in conjunction with the minute doses of blue-pill and aloes; such a combination seeming to interfere least with the state of that organ, when it was the object to act gently on the intestinal canal.

Local application to the epigastrium, as the tartar-emetic ointment or blisters, may, from their observed effects be enumerated among the remedies controlling the morbid sensibility of the stomach: they were seldom employed in the cases presenting the condition of anæmia, and upon the whole were not to be reckoned among the most serviceable of the remedies used. Leeching the region of the stomach seemed in no instance to be required. It may be here incidentally

mentioned that one of the most severe cases, marked by extreme irritability of the stomach and disturbance of the circulation, occurred after free venesection had been injudiciously employed for a supposed inflammatory condition of the abdominal viscera.

Passing from the acknowledged gastric remedies, the next remedies to be noticed are those, which, though generally distinguished as tonics, and vaguely supposed to act by giving tone to the solids of the body or by improving the qualities of the blood, from the observation of the present cases, seem entitled to be regarded as acting primarily on the functions of the stomach; as they were found servicable in the general improvement of the health, only accordingly as, in the first instance, their exhibition was attended with increased energy in these functions and abatement of the distress attending the process of digestion: the remedies alluded to, are principally the preparations of iron. The cases in which the employment of this remedy was most efficacious, were, as might be expected, those distinguished by the presence of anæmia: and certainly no pretension is made to any novelty of practice in this respect, except it be in the extent to which it was carried; it was almost universally used in this division of cases, and in several of them was the only remedy employed. The preparation most frequently used, was that recommended by Merat and De Lens in their Dict. de Matière Médicale, in which carbonate of potash and sulphate of iron in equal quantities are decomposed by simple trituration; it was given in the form of pills or electuary, in daily quantities varying from ʒj. to ʒiss. This preparation was found far more efficacious than any other, probably from the decomposition and conversion into a sub-carbonate of iron being more complete; very rarely, indeed, was it found necessary to suspend its use from its producing any disagreeable effects. The headache, which was almost uniformly present in these cases was no bar to its use: the earliest admission on the part of the patient, of improvement after beginning this treatment, was usually conveyed in the expression, that they could "eat better:" all attempts to lessen the disorder by improving the diet often failed, and the stomach would rebel against it, till the chalybeate treatment had been employed some days. The use of iron, however, was not confined to this section of cases, but was found of service in many others; but in these latter instances it was in combination mostly with aloes and in the form of the sulphate that it was employed; three weeks or a month was the ordinary duration of the treatment in those cases in which iron was the remedy principally relied on. Next to the improvement in the gastric functions, one of the earliest indications of the good effect of the remedy, was a marked improvement in the complexion; at a later period abatement of the palpitation ensued. When the chalybeate did not prove beneficial at the commencement of the treatment, and usually when active purging was required, it was still frequently found to hasten and complete the convalescence when employed at a later period. Sulphate of quinine was occasionally used in combination with iron or alone under the same circumstances and with similar but less striking results.

Next to remedies addressed more especially to the stomach, those acting on the remainder of the canal naturally occur to be noticed. In the same proportion of cases and in the same degree as constipation of the bowels was present, recourse was had to the use of laxatives or purgatives, much more frequently as merely an auxiliary and occasional part of the treatment, than constituting its most essential department. A combination of aloes, rhubarb, and Rochelle salt, given once in the morning, was the laxative most commonly employed, when the object was simply to assist in procuring a daily evacuation; and the resinous purgatives in larger quantities with the addition of sulphate of iron were used, when more rigorous purging seemed requisite.

It was rare that much advantage was derived from the use of mercurials, even in alterative doses; mercury was never employed with benefit in the large proportion of cases characterized by anæmia, but was chiefly serviceable where the

tongue was more than comonly furred, and where vomiting or retching were present or the secretions of the bowels disordered. In these instances the blue-pill on doses of gr. ss.—gr j. with *extr. alo. and extr. hyosc.* āā, gr. j., or with *pulv. calumb.* gr iij. *ter quotidie.* was the most usual mode of exhibition.

Distressing symptoms affecting other organs and their functional disorders for the most part failed of being relieved by direct remedies and but ensued on the amelioration of the gastric affection. This was especially the case with the group of symptoms already described as interesting the circulation, especially the palpitation and dyspnœa: belladonna applied as a plaister to the cardiac region seemed but in a single instance to have been of service. In one case incomplete aphonia, which did not yield to external applications to the region of the larynx, ceased speedily after commencing the treatment by preparations of iron. Rather more latitude was practicable in alleviating the affections of the head: even in a generally asthenic state, cupping the occiput was found sometimes of service, in removing headache when accompanied with vertigo and drowsiness; and in one instance already quoted, vomiting, which had long existed, ceased to recur after the use of this remedy: but the most frequent relief to the ordinary headache was derived from the application of blisters behind the ears; very rarely this troublesome accompaniment yielded to valerian when other means had failed.

As the general result of the 101 cases it may be stated that of these, 62 were discharged recovered, 25 benefitted, and 14 discontinued attendance without having received any relief. Those cases in which the chalybeate treatment was found admissible, were by far the most satisfactory in the immediate result, but relapses were not uncommon among them at no distant period from the date of the first discharge. The development of phthisis, during the treatment did not interfere always with the recovery from the gastric disorder.

Second Division of Gastric Affections, or Inflammatory and Organic Diseases of the Stomach.

This second division of gastric affections includes the cases in which it was more or less clearly denoted that there was an excess of blood congested in, or circulating through, the coats of the stomach.

Inflammatory dyspepsia.—It has already been stated that the reference of cases to this division was often determined rather by the nature of the treatment found successful than by the presence of any pathognomonic symptoms—and it may now be added, that, intimately allied with the cases of the foregoing division in the general features of the gastric affection above detailed, and excluding the occasional presence of none of its symptoms, there occurred a number of other cases, which have been separated from the former upon no other absolute grounds, than the different nature of the remedies that were found efficacious, and which, in one word, were antiphlogistic: this perhaps may entitle them to be distinguished as cases of inflammatory dyspepsia; premising that by inflammatory is intended a tendency to, rather than the actual presence of, inflammation. But although these cases presented no symptoms, which were not occasionally met with among the former; still the greater intensity or comparatively more frequent occurrence of some of these symptoms or conditions may be mentioned, as coinciding with the more absolute contrast in the treatment to justify a separate analysis of them. Combining then the results of the treatment with this greater frequency or predominance of certain symptoms, the following conditions may be assigned, as the principal grounds, on which they were considered as cases of inflammatory dyspepsia, and therefore distinguishable from those of the foregoing division: these conditions or results are placed in an order corresponding to the importance attached to them in a diagnostic point of view, commencing with the most important.

1. Relief experienced from blood-letting, especially by leeches to the epigastrium or its vicinity.
2. The good effects of rigid abstinence in aid of other remedies.
3. Redness, marginal or terminal, of the tongue, with more or less dryness.*
4. The presence of pyrexia of more or less intensity.
5. Urgent thirst.
6. Sensibility of epigastrium to pressure, amounting to tenderness.
7. Bitter taste in mouth.
8. Vomiting.

More or fewer of the above conditions or results were observed in each of the cases at present under consideration; and, the higher in the list the more frequent was their occurrence. This form of gastric disorder is far from being so common in the practice of the hospital as the former: indeed, during the same period that notes of the 101 of the former description were taken, only 13 of the latter have been recorded: considering their paucity, therefore, no formal analysis of them is admissible. These likewise, were all cases of females, but on the other hand they differed from the previous cases, in the subjects being generally robust, and occasionally, if not for the gastric yet for incidental affections, they required and were benefited by general blood-letting. In two of the cases there seemed to be a remarkable aptitude to inflammatory action and irritation of the mucous membranes; an erythematous inflammation of the fauces occurring once or oftener in the course of the gastric disorder; at another time, a smart attack of diarrhœa; in one of the two cases, erysipelas of the face followed the gastric affection, but was cut short by blood-letting; in the other, a young unmarried female, was subject at the same time to severe menorrhagia. Of the gastric affection little remains to be added, beyond what has already been stated for the purpose of contrast with the former description of cases. In one instance the inflammatory symptoms seem to have only supervened after long-continued retching; in this case the attack was brought on by mental anxiety and yielded in a great measure to repose.

In another instance, attended with distressing thirst, cold drinks of any kind greatly aggravated the pain at the epigastrium.

With the exception, that in none of the present cases was there that general state of the system, to which the term anæmia has been appropriated, other organs and functions seemed to be sympathetically or by extension of disease implicated, much in the same manner, and with the same varieties as in the former division of cases. It is to be observed also, that, in several, there seemed a disposition in the disorder, on the subsidence of the inflammatory symptoms, to pass into that form characterised merely by impaired function and morbid sensibility; and a general asthenic state to replace the inflammatory diathesis.

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* As a singular exception to the general rule, that redness of the tongue indicates an inflammatory condition of the stomach; the case of a young female may be here noticed, who is a frequent applicant to the hospital for relief from a disorder she is continually subject to, consisting in a constant and most distressing pain in some region of the spine, with aching and occasional numbness of the lower extremities. The cervical region and the occiput are the most frequent seats of the pain. In the interval of her attacks she appears tolerably robust, but, after a severe and prolonged attack, she has presented a state bordering on anæmia. There are seldom any direct symptoms denoting any gastric disturbance; but the singularity of her case consists in the tongue, during these attacks, being quite dry down the centre and of a bright red, without there being any local cause or the presence of fever to account for it. Leeches to the epigastrium had frequently been applied without being attended with any benefit.

This point will be further considered in the short notice that follows the treatment.

Leeching the epigastrium was in all these cases, with but two exceptions, in which venesection was instituted, the principal remedy: rarely one application was sufficient, but more commonly it required relays of leeches applied on alternate days for several successive times, before any great impression was made on the disorder, with this, when it could be enforced, a gruel diet was rigidly adhered to. With the exception of this local depletion and of the exclusion of all tonic remedies in this stage, the treatment was similar to that already detailed under the foregoing division; of which subordinate part of the treatment, moderate purging, more commonly by mercurials than with the former cases, was found most serviceable. In one instance, of a girl, an emetic was of itself found adequate to remove the disorder. But the circumstance of most importance to insist upon, is the necessity of not prolonging this kind of treatment too long; nor did the symptoms alone always indicate clearly when such treatment should terminate: marked relief might have been procured by the leeching and abstinence, but still the sensibility and pain at the epigastrium would persist, and the tongue, even if less red, would still be foul, and the disorder would continue stationary under the continuance of the same plan of treatment, and would only be exchanged for decided convalescence by a timely recourse to a more tonic treatment, and especially the employment of bitter infusions, and by returning at the same time to a more generous diet, and perhaps of animal food —but, as, with regard to the medicinal remedies, the choice in gastric affections of those that are appropriate must of necessity often be tentative, the same likewise holds good with the regiminal management of them, and especially as concerns the period for improving the quality of the patient's diet.

In the cases of gastric affections, hitherto recorded in this division of the subject, neither the severity of the actual symptoms in the acute, nor the inroads on the constitution in the chronic cases, were such, as to lead to the inference, that there existed acute inflammation of the mucous membrane in the former, or disorganization of its tissue in the latter. But in the cases to which the remarks immediately ensuing appertain, one or the other of these conditions respectively, in the acute and chronic instances, was either presumed to exist or was verified by necroscopical examination. It is deserving of notice that these proper inflammatory or disorganizing affections, though the cases are not numerous, were with one exception met with in males, while the preceding cases were almost exclusively of females.

Acute Gastritis.—Two instances only occurred of acute inflammation of the gastro-mucous membrane, in both, the presence of such inflammation being inferred from the severity of the symptoms, and in one of them confirmed by the necroscopical appearances.

The first case occurred in a man notorious for his pugilistic and intemperate habits; who, after drinking, but without being intoxicated, was seized with intense pain in the epigastrium and left hypochondrium, momentarily aggravated and attended with tenderness in the same situations, increased by inspiration; also with bilious vomiting; the tongue was loaded with white fur, but with its surface red beneath, there was considerable fever and constipation of the bowels; prompt application for relief having been made, leeches largely applied to the epigastrium with a soap enema cut short the severity of the attack, which was afterwards speedily terminated by laxative medicines and abstinence.

The second case terminated fatally; from the obscurity of its cause, extreme severity of the symptoms, and singular condition of the whole surface of the body, as well as from the necroscopical appearances, it seemed worthy of being subjoined in more detail.

Case.—*Extreme agony at epigastrium and in loins—purple color of the whole surface of the body during life—excessive redness of the gastro-mucous membrane—redness of the internal lining of the arteries—ecchymosis of the kidney.*

J. H. æt. 30, laborer, was admitted I. P. Oct. 22, shivering, and suffering extreme agony from pain referred to the loins and across the epigastrium. His face and the whole surface of his body, and more especially the hands were uniformly of a dark red color, not very unlike port wine stain. The tongue was contracted and of an ashy whiteness, while the fauces were red without any swelling. The abdomen was tense and tender on pressure. The respiration laborious and interrupted—the pulse 96 and small.

The account he gave of himself was, that he had been suddenly seized on the 19th with great pain, especially in the loins, and that he had vomited since, whatever he had swallowed; he had no evacuation from the bowels since two hours after his seizure.

He was bled to ʒxxv. without any abatement of his suffering; a warm bath afterwards relieved him slightly. He died very suddenly in the evening of the same day without any symptom of collapse, but having a short time previously expressed himself as being easier.

Post-mortem examination, Oct. 23.—The mucous membrane of the stomach was uniformly of an intensely dark red colour; the redness did not extend to the small intestines, nor to the œsophagus. The internal surface of the arteries presented also a dark red color, extending throughout their entire circumference—the blood was diffluent—there was an ecchymosis in one of the kidneys.

M. Lombard of Geneva, who was accidentally present and saw the stomach, considered its appearance to be similar to that met with from acrid poison—no clue to any such origin of the complaint was discovered, and the stomach had been emptied previous to the patient's admission. Dr. Haviland has since met with the same color of the surface of the body in a case of small-pox, which did not terminate fatally. In another instance in the practice of the same gentleman, but where there was no variolous eruption, most of the internal organs of the thorax and abdomen were found to present the same dark red appearance as described in the above case.

Organic Diseases of the Stomach.—The next subdivision of cases comprises those (eight in number, seven male and one female) in which the tissues of the stomach were presumed, or, as in one instance, found to be disorganized. The circumstances on which this distinction from the previous cases was founded, were the following.

1st. The age of the patients, who had all passed the meridian of life (4 of the 8 being æt. from 60 to 62, and 4 from 42 to 48), while their aspect was more aged than their years.

2nd. Family predisposition. This was traced only in one of the patients, æt. 59, whose mother, sister and brother, were stated to have died of the same disease at the several ages of 63, 66, and 69.

3d. Peculiarity of the complexion; which was most commonly straw-colored, with a haggard countenance.

4th. Gradual approach of the disorder for a length of time, perhaps for several years.

5th. The epigastrium drawn in.

6th. Some circumstance in addition to the ordinary symptoms of gastric disorder, which served to individualize each case; as one of the following. Hæmatemesis, sometimes with melæna, having occurred more or less frequently at some period of the disorder (in 3 of the cases)—pyrosis long continued and copious, (also in 3, including the case in which the disease was verified by inspection)—exact localization of the epigastric pain opposite to the pylorus and reaching to the back—the intensity of the pain and its uniform coincidence

with the period of digestion—vomiting more abrupt than in ordinary cases of dyspepsia and independent of nausea, but preceded by paroxysms of severe pain; some constant fixed and uniform morbid sensation in the epigastrium, as of coldness, &c.

7th. The inefficacy of remedies in effecting any change in the character of the gastric symptoms—the power being limited to producing temporary alleviation.

The tongue, in the cases taken collectively presented no uniformity of appearance which might serve to assist the diagnosis; although in each case individually its characters were very constant. Clay-colored evacuations were common in the cases in which the symptoms of organic disease were most marked. Little unfortunately need be said of the treatment. The utmost attention practicable was of course paid to diet; but however rigorous, this would often fail to procure any alleviation: cold meat in very small quantities was found occasionally to agree best; in other instances no animal food could be borne. In more than one of the cases a pill consisting of equal parts of extract of rhubarb and extract of hyoscyamus was found for a time, if given about an hour after a meal, to render the completion of digestion less painful; and in several of the cases, *extr. hyoscy.* gr. ij. *and pil. hydr.* gr. ss. having been taken two three times daily, and continued for a week or ten days, the patients were enabled to be discharged as benefited. In one case in which hæmatemesis had previously occurred, and the locality of the pain was accurately defined, a single application gave immediate relief to this symptom. As the bowels in all the cases were habitually torpid, the aperient best tolerated was castor-oil. In one instance, as it was believed, of confirmed pyloric disease, a seton in the epigastrium was followed by manifest alleviation of the symptoms, but which did not long endure. Hydrocyanic acid was also occasionally serviceable in allaying the pain.

The case which terminated fatally while under observation is here subjoined.

CASE. *Carcinoma of the Pylorus—Atrophy of the Liver.*—W. B., æt. 60, labourer, was admitted, O. P. Oct. 8, of a pallid but streaky complexion: he complained of constant uneasiness at the epigastrium, which he described as a sensation of something "turning over" in his stomach with a feeling of weight there: the epigastrium was slightly tender: immediately after a meal, especially of meat, he suffered severe pain in the same situation; milk and rice caused least suffering: he stated also, that, just before passing urine, the uneasiness at the epigastrium was much increased and again subsided on having voided it: frequently on first rising in the morning he vomited a tea-cupful of clear, tasteless watery fluid. The surface of the tongue was generally clean but with two whitish lateral streaks. The bowels were never open without the aid of medicine: the pulse was not accelerated. The complaint had been gradually coming on for two years or more; during the last twelve months only had the symptoms been severe.

From the 8th to the 29th the treatment consisted chiefly in the application of tartar-emetic ointment to the epigastrium, and in giving gr. ½ doses of acetate of morphia and occasionally ol. ric—during this period his sufferings had somewhat abated, and the pyrosis but rarely returned. In addition to the above symptoms, he now complained of incessant calls to pass his urine, which continued afterwards to be a very frequent symptom. From the 29th of October to the 19th of November the same plan was continued, with increased doses of the morphia, and a substitution of the decoct. aloes comp. for the ol. ric. During this interval his sufferings had again become more severe, and the pyrosis returned frequently; and during the last week of this period he had no evacuation from the bowels, and every thing he swallowed caused vomiting; the pulse had now become much accelerated and quite thready. He was then urged to become I. P. but declined, and remained at home without further attendance at the hospital till his death, which took place on the 13th of Dec. His friends maintained

that, during the last five weeks of his life, he took nothing but cold water, or a little tea.

Post-mortem examination, Dec. 14.—Thoracic organs generally healthy—muscular parietes of heart rather soft. Lungs remarkably pale, their vesicular structure very perceptible from the size of the cells.

The stomach contained a pint of dark fluid—the cardiac extremity, and the whole extent of the mucous membrane, to within about four inches of the pylorus, appeared healthy; the membrane admitting of being torn off in moderately large shreds. The pyloric extremity presented one entire ulcerated surface, dark, uneven, with abruptly defined edge, resembling much the dysenteric ulcer of the rectum—the little finger could not be passed through the pylorus, without rupturing it—all the remaining coats of this portion of the stomach were excessively thickened, and in some places almost cartilaginous; in others gelatiniform and easily lacerable: indurated, cartilaginous, tuberculated glands surrounded the diseased portion of the stomach, so that the whole formed a large dense mass. There was no other disease in the intestinal canal. The liver was globular in form, and so contracted as to be entirely confined to the right hypochondrium; it was very hard, but otherwise its section presented nothing remarkable.

Hæmatemesis.—Although hæmorrhage from the stomach has but rarely occurred, during the period of these observations, in any case to such an extent as to appear to constitute an affection *sui generis*—yet, as an incident or symptom, in the course of several of the cases, it has not been so infrequent as not to merit a brief notice. Indeed, in several cases, the presence of this symptom has been the only tangible circumstance by which to connect their histories, and introduce them in this clinical analysis. Viewing it, therefore, chiefly as incidental to other affections, it may be most convenient to state, generally, the different descriptions of cases in which it occurred. The total number of cases in which it was noticed did not exceed 11.

1st. In cases of merely functional disorder of the stomach.

In two out of the 101 cases, the subject of analysis, in the early part of these pages, and which were characterized by irritability, as well as morbid sensibility of the stomach, *i. e.* in cases of dyspepsia with vomiting, hæmatemesis and melæna had occurred in the previous history of the patients. It also formed the principal feature in the case of a married woman, æt. 54, in which, likewise, symptoms of functional disorder of the stomach, with nausea, but without vomiting, except of the blood, were present; with costiveness of the bowels. The complexion was wan and sallow, the circulation normal; but there was a dry cough and dyspnœa. There was considerable difficulty in determining the source of the hæmorrhage; the patient recovered under the use of small doses of calomel and colocynth.

2dly. In cases terminating in disorganization of the tissues of the stomach.

In three out of the eight cases, lately reviewed, in which this condition of the stomach was inferred, hæmatemesis with or without melæna (pitchy stools), had occurred in the course of the disorder.

3rdly. Cases of amenorrhœa, in which the gastric hæmorrhage seemed to be connected with the suspension of the catamenial discharge. Three cases of this description occurred. (1.) One in an unmarried female, æt. 21, in service, of a robust habit, yet with a pale and sallow countenance—subject to ordinary symptoms of stomach disorder, but more especially to tympanitic swelling of the abdomen; with a very excitable circulation—there were cough, dypnœa, and formerly slight hæmoptysis, auscultation furnishing only negative results. Amenorrhœa had existed for some months, and latterly there was a thick vaginal discharge, with much redness and tumefaction of the nymphæ, and termination of the urethra. In the course of the disorder an erythematous eruption of the

thighs appeared. In this patient slight hæmatemesis recurred at intervals, and, according to the patient's account, at the period when menstruation was due. But little benefit was derived from any remedies: the patient married shortly, when she became affected with chronic eczema of the scalp, which still continues. (3.) The second was of an unmarried female, æt. 24, in service, possessing embonpoint, but of a delicate appearance; subject to a dry cough with dyspnœa, and of a phthisical aspect, but nothing being detected by auscultation beyond an occasional rhoncus: during treatment in the hospital, she had hectic fever, with stomach disorder and confined bowels: she had not menstruated for three months. In the course of her complaint, she several times vomited blood in considerable quantities of a florid color—she recovered by mild purging followed by quinine—the pulmonary symptoms had early disappeared. (3.) The third case was of a widow, æt. 27. In this patient irregular ague, of a month's duration, had preceded the hæmorrhagic disorder, but had left no sensible enlargement of the spleen: during the course of the latter affection, the pulse continued very variable in force and frequency, with palpitation and œdema of the legs, of one, more especially: there were likewise cough and dyspnœa, and frequently slight hæmoptysis, but still the prominent symptoms were those of disturbance of the gastric functions, with hæmorrhage from the stomach: the bowels were generally torpid: the catamenia had been interrupted for six months. In this case, the hæmatemesis was frequent, and followed by "sooty stools" (melæna). The remedies employed were purging with calomel, saline and vegetable diuretics, with tinct. lyttæ. Under this treatment she recovered, and during her recovery the catamenia were fully re-established.

4thly. In cases of visceral disease of the abdomen, most probably of the spleen—one instance only of this description occurred; but, considering that its history remains incomplete, and that it was too complicated to admit of a connected abridgment, the heading of this eventful case, as entered in the case-book, may suffice to convey some idea of the extent to which the hæmorrhage was carried, and the probable kind of disease with which it was associated.

Case. A married woman, æt. 33,—ague for 12 months—an undefined tumor, occupying the left side of the abdomen, producing an induration principally in the left iliac region—abdominal disease had been progressing for four years, dating from the ague—an intercurrent uterine affection, treated, according to the patient's account, by "removal of something from the womb," in a London hospital—latterly hæmatemesis, extremely copious and frequent—almost daily for many weeks—with occasional melæna and hæmaturia—much suffering from pain and tenderness in the indurated region of the abdomen, and in the epigastrium. The hæmatemesis was successfully combated by small doses of calomel and opium, acetate of lead, and sulphate of copper, given in succession—extremely severe and copious salivation from mercurial inunction, continued only five days—only temporary interruption of the hæmatemesis—the ptyalism relieved apparently by lead and opium—subsequent treatment of the general disease by iodine—recurrence of the salivation without a repetition of the use of mercury—occurrence of severe diarrhœa, with final cessation of the hæmatemesis—further improvement to the local tenderness by a seton—continuance of the iodine treatment. At the time this patient, who was made O. P., discontinued attendance, the disease appeared to be checked and indolent.

5thly. *Idiopathic (?) Hæmatemesis.*—One case remains to be mentioned, in which the gastric hæmorrhage could not be attached to any concurrent affection, and seemed, therefore, an idiopathic disorder—the case on this account is subjoined—attention is invited to the circumstance, that the internal hæmorrhage was so sudden and copious as to produce syncope, and to be followed by the usual symptoms ensuing upon excessive loss of blood.

CASE. *Hæmatemesis and Melæna.*—G. B. a labourer, æt. 42, was admitted

I. P. July 30. Spare, and of a slightly yellowish complexion. Tongue was loaded with white fur—the appetite moderate, epigastrium rather sensible to pressure, and bowels rather confined; pulse normal; his chief complaint was of a "heavy beating" at the pit of the stomach with soreness there and at the chest. The following was the account he gave of his disorder: he had been ailing two months with a nipping pain in the abdomen, and about the 10th instant suddenly fainted, and shortly after had purging, the stools being as black as pitch, which continued for two days: ever since the stools had been very dark. On the 16th he vomited more than a pint of blood, and on the same day, had again pitchy stools—since that time he had felt very weak. During the first three days succeeding his admission, he took each night calom. gr. v., and occasionally had ol. ric. and was put on a milk diet. During this time the stools, at first very dark but not loose became looser and much less dark—he had all along complained much of pain in the forehead and vertigo—he was then ordered calom. gr. ij. o. n. and ol. ric. p. r. n. and was allowed meat diet—by the 29th he was much improved in his health: the stools were relaxed and of a bright yellow colour—the same treatment was continued with diminished doses and gradually left off, and he was discharged well on the 8th of the following month.

Disorders of the Intestines.

The same division of cases has been adopted in regard to intestinal affections, as was chosen in those of the stomach, viz. into non-inflammatory or functional, and inflammatory or disorganizing, and with the same reservation as to the grounds of diagnosis.

First Division of Cases, in which neither Vascular Congestion nor Inflammation were supposed to have existed.

Constipation.—Constipation as the simplest form of functional derangement of the intestines, may first be noticed.

General Statement.—Of the total of cases entered in the hospital registers in the years 1836-37, 2.18 per cent. are included under this head; and in 1837 (of which year the data are more complete) not 1 per cent. of the male cases were of this description, while this complaint constituted 3¼ per cent. of the females. As to their proportional distribution between the town and country admissions of 1837, 2.75 per cent. of the former, and 1.35 per cent. of the latter, were cases of constipation.

Analysis of Cases.—For so simple a disorder as constipation it is not to be expected that there are many applicants to the hospital, till, by its continuance, it has become complicated with some ulterior disorder, producing pain or much inconvenience up to a certain point, its treatment remains in the hands of the patients' themselves or of druggist-practitioners; and it is, not improbably, to this circumstance that its subsequent aggravation is in many instances attributable—and hence, in hospital practice, it is the result of the treatment rather that suggests the diagnosis of so simple a form of disorder, being the origin of the evil, than the actual symptoms in its complicated state.

These remarks may suffice to shew, that, in attempting to extract from the cases (36) of this affection in the charge of the author anything deserving of notice, in regard to its predisposing causes, symptoms, or treatment; the denomination of constipation, as the substantive affection, was in many of the instances adopted on somewhat arbitrary ground; and especially of that subdivision of them, which may be qualified by the title of *constipation with dyspepsia.*

As disorders of the stomach and of the bowels are naturally allied in their

functional relations so are they in their predisposing causes. Agreeably to this obvious proposition, the circumstances attending the origin of the disorder in the present cases were similar with those enlarged upon in the preceding analysis of cases of functional disorder of the stomach. Residence in a town (two thirds of the cases being of town patients); the habits and confinement within doors of domestic female servants; excessive sedentariness and want of fresh air on the part of those living on the use of the needle; abuse of purgative medicines; the epochs of puberty and of the climacteric age; parturition, lactation, precursory ague, or aguish diathesis; convalescence from continued fever—such were the various circumstances to which the origin of the disorder appeared on investigation to be attributable. It would be useless attempting to explain why, with an apparent identity in the predisposing causes, the resulting form and seat of the affection should not have been identical likewise; why the derangement should have fixed upon the first step in the process of assimilation in the one class of patients and on the later stages in the other. But, setting this question aside, in viewing the history of the cases, a difference may be traced in the ulterior results corresponding to this difference in the preliminary disorder: for, if in both description of cases, in the gastric and in the intestinal, the more remote parts of the economy resented the derangement of the primæ viæ, it was not to the same extent in both; rarely was there that extreme disorder of the circulating system noticed in the present instances, which was so common in the gastric cases; in a single instance only had it arrived at the degree of producing anæmia. The patients for the most part retained their embonpoint; although with few exceptions paleness or discoloration of the countenance characterized the disorder in its most usual chronic form. Loss of strength moreover, although not uncommonly, was not so frequently complained of, as by those whose cases have been referred to the subject of gastric disorder. Thus far then, the degree in which the general health had suffered, as conveyed in this cursory statement, is consistent with the diagnosis formed of them, which implied that the primary stages of assimilation, viz. chymification and chylification, having been duly performed, the ulterior derangement in the digestive apparatus, in the intestinal canal, was attended, with less prejudice to the animal economy. Some remarks on certain peculiarities in the immediate and remote symptoms or disorders of functions, to be made in the further analysis of the cases, will be found in accordance with this view.

If all the (36) cases have been included under the head of constipation, as the substantive disorder in each, still they might have been subdivided, according to certain varieties in the proper intestinal symptoms, or in the nature of the secondary or dependant functional disorders.

And first of the symptoms, proper to the intestines themselves.

The Constipation.—Every grade in this derangement of the intestinal functions was met with; as simple torper of the bowels requiring the continued solicitations of medicine—daily but scanty and indurated evacuations—massy and copious fæces voided at protracted intervals—obstinate obstruction of the bowels, in several instances lasting for a week, and, in one case, an entire fortnight. But one remark need here be made on this part of the subject, viz that although the longer a constipated habit of body had lasted, the greater was the mischief that ensued to the general health, still the cases in which the fæces had accumulated in the canal to the greatest amount or for the longest space of time, were not generally those in which the health was most deteriorated—a circumstance to be explained perhaps, by admitting that in such cases while defecation was simply at fault, the proper nutrition of the body had been ensured by all the previous steps in the process of assimilation.

Pain and Tenderness.—Sometimes there was increased sensibility to pressure all over, the abdomen, especially in children. In one instance this existed to

such a degree that leeches were prescribed, yet entirely disappeared on free evacuation of the bowels before the application of the leeches. The pain with or without tenderness usually corresponded to some portion of the colon, more particularly the ascending or decending portion. In other instances both hypochondria were painful, and excluding the cases in which gastric disorder prevailed, the right hypochondrium more frequently than the left. The umbilical region was rarely painful, and about as seldom was there pain and increased sensibility of the hypogastrium. But perhaps the most frequent seat of pain was the loins, extending forwards to the front of the abdomen; that this resulted from the state of the ascending or descending colon was clear from the relief consequent on the simple evacuation of the bowel. (It may be here observed that the loins are the seat of pain in as great a variety of disorders as almost any part of the body: the pain apparently depending in different cases upon the condition of very different organs, although vaguely referred alike to the lumbar regions, or by the patients themselves to the kidneys; as, *e. g.* in rheumatism, renal disease, disorder of the menstruation, especially menorrhagia, the gravid uterus, piles, constipation: as a point in diagnosis it is by no means immaterial to determine its source). The interscapular region was not an uncommon seat of pain also, in these cases of constipation. Another description of pain, which, although not corresponding to the region of the colon, seemed to result from its distention by fæces or flatus, was cramp in the legs; in two instances this was the prominent symptom and yielded to the free evacuation of the bowel.

Flatulence.—General tension of the abdomen, local tympany over the colon and especially the caput coli, borborygmi, large extrication of flatus with the stools, fulness of the hypogastrium, were the various modes in which flatulence of the intestines occurred. Over-distention of the canal by the gaseous products of the intestines seemed in many of the instances the cause of the constipation.

Disordered Secretions.—As far as opportunities of ascertaining this point existed, the change in the appearance of the fæces was more commonly the result of protracted absorption of their more fluid part than from altered secretions; where these were much altered, the liver seemed to be implicated, as where the stools had a clayey appearance. In one instance a sudden and excessive secretion of bile into the canal seemed to act as a spontaneous purge to dislodge the accumulated fæces.

Symptoms or Disorders referrible to other Organs or Functions. 1st. The Stomach.—Unquestionably many of the present cases, if their nature had been estimated merely by the more obvious symptoms and the complaints made by the patients, would have been included with those reviewed as instances of functional disorder of the stomach. The following were the grounds on which the gastric symptoms were assumed to be secondary to the intestinal, in the cases at present under review. Although the gastric disturbance, when present to any extent, coincided in its general phenomena with the cases of primary affection of the stomach, yet it was distinguished by its being terminated by the free evacuation of the bowels: some of its symptoms, however, in their individual bearing likewise presented some points of distinction. Vomiting for instance was more frequent than prolonged nausea; and occasionally seemed to be the result of inverted peristaltic action consequent on the ineffectual efforts to dislodge the fecal contents, and in one instance the concussion produced by the violence of the vomiting appeared to have this desired effect. The uneasiness attending digestion was situated in regions corresponding to the colon rather than to the stomach—the pain in the left hypochondrium, the "side-ache" so often complained of, and so rebellious in cases of dyspepsia, yielded in the present cases

readily, when the bowels acted freely. As some degree of constipation is as common an accompaniment of dyspepsia as dyspepsia is of constipation, it might at first sight be said that the point of diagnosis under consideration is immaterial to the treatment—this is however far from the truth; for the most mischievous practice in dyspepsia accompanied by constipation is indiscriminate purging, whereas in the present disorder much greater latitude is allowable in the use of purgative medicines, but of this hereafter.

Circulation.—Occasionally an extremely rapid pulse, frequently more or less palpitation, syncope in one case of a delicate female during lactation, and in another patient constantly employed at the needle, anæmia, were among the secondary affections—but that extreme disburbance in the circulation so common in the cases of stomach affections was rarely met with in these; neither were febrile accessions so frequent; œdema was not uncommon, confined chiefly to the lower extremities. and sometimes to one leg: this seemed to be of a different nature from the puffiness of the ancles, met with so frequently in asthenic females; as it occurred as often among the robust, and was rather of the nature of that which accompanies erythema nodosum, into which in some cases it seemed to pass, and it was generally coincident with amenorrhœa.

Pulmonary System.—Cough and dyspnœa occurred but rarely in comparison with the gastric cases.

Nervous System.—The most frequent were the affections of this system and which were characteristic of a certain portion of the cases—vertigo, head-ache, and drowsiness, being the ordinary form—hemicrania, wakefulness; heaviness of the limbs; aching of the legs; tremors; in one instance, of a child, an approach to chorea; in another hysterical fits; in several depression of spirits more common perhaps at the climacteric epoch, were likewise observed. Dimness of sight was complained of by some; in one instance of a young girl constantly employed at her needle, this, accompanied by a troublesome dazzling, was her principal complaint, but yielded with the intestinal disorder.

Menstruation.—The catamenia were not deficient in the same proportion of cases as in those of gastric affection: occasionally they were even profuse: when not absolutely wanting, this defect consisted rather in the irregularity of their returns than in scantiness, or discolouration—some of the cases, however, seemed to be characterised by the presence of amenorrhœa as a complication; in these the cessation of the catamenia was often sudden and not preceded by gradual failure; and their return was often as abrupt at an early period of convalescence; a circumstance in contrast with the cases of prolonged gastric disorder in which the re-establishment of the catamenia was postponed to a much later period. A pricking cessation of the mammæ was felt in one instance in connexion with the suspension of the catamenia. In more than one instance among the unmarried females applying for relief for constipation accompanied with dyspeptic symptoms, including vomiting and amenorrhœa, a gravid uterus was the probable cause of the disorder.

Treatment.—Much will not be expected to be said on the treatment of so simple a pathological state as constipation—yet, as in the majority of the cases the patients of their own accord or by the advice of others, had for a considerable time taken purgative medicines previously to their application at the hospital (the common excuse for such application being that they could not afford to pay for more medicine) and their treatment as hospital patients still continuing to be essentially purgative, it may be worth while to enquire to what modification of this common treatment, it was owing, that a more prompt and effectual result

was in the latter instance insured. "Salts and senna" are the ordinary drugs employed by the poor in their own houses, and often in no sparing measure, whereas these remedies were but rarely employed in the present cases after their becoming hospital patients; but on a general review of the treatment adopted its principal peculiarity and contrast from the domestic management, consisted, as the notes of the cases declare, in the frequent combination of tonic remedies with those of a purgative nature. Of these tonic remedies the principal and almost sole, was sulphate of iron, in combination with aloes or extr. coloc. comp. The purgatives employed were chiefly of the resinous class—and as a general remark it may be noted, that the more chronic the primary disorder of the bowels or the more advanced and grave the disturbance of other functions, the less could simple purgatives be depended on, and the greater the necessity of employing tonics and the larger their share in the success of the treatment. The one of iron was by no means beneficial only when it might be expected to act as an emmenagogue; unusual torpor of the colon, or debility of digestion seemed equally to require and be benefitted by its combination with purgatives. The history of the cases further evinced the good effects of varying the drug in different cases or in the same case at different stages; to detail these varieties of treatment would be to little purpose. The above brief exposition, pretends only to express the general character of the treatment, with a view of recommending a seasonable combination of tonics with purgatives in such class of cases: neither is any claim to novelty preferred in this respect; but the object has been merely to add the results of a trial on a tolerably extensive scale,* to those with which the profession may be already acquainted in favour of this modification of treatment. Leeching in the vicinity of the external labia sometimes aided the return of the catamenia. Blisters to the nape of the neck or behind the ears generally relieved the cerebral symptoms. Leeches or other depleting remedies were rarely required for the removal of any local pain.

Intestinal Entozoa—General Statement.—The number of cases, entered under this title in the hospital registers during the years 1836-37, amounting only to 0.69 per cent. does not include all in which these entozoa were known even to have occurred; since their presence in the intestinal canal was, more frequently than not, merely an adventitious circumstance in the course of graver disorders; also many cases have been registered under other titles, as chorea and epilepsy, although these affections may have been caused by the presence of worms.

Analysis of Cases.—The number of cases of which the notes have been kept during this period amounts to 17—8 being cases of ascarides, 6 of ascaris lumbricoides, 2 of ascar. and ascar. lumbric. co-existing in the same individual, and 1 of trichocephalia—12 were of females, and 5 of males. If an estimate made on so small a scale might be trusted, it would seem 3 cases occurred among country patients to 2 among town patients; and taking the proportion of the totals of male and female admissions, that rather more than three females were subject to these entozoa to 2 males. With respect to age, 3 of the patients were 10 years or under, 7 from 15 to 20, 5 from 20 to 40, and 2 from 55 to 65.

States of Health or Diseases in which they occurred.—Three were cases of functional disorder of the stomach, one of gastric disorder with inflammatory

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* The number of cases from which the results of this generalization have in strictness been deduced, was only 36; but it may be added that they are in exact unison with the results of a much more extensive adoption of the same treatment, both previously and subsequently—but of which no precise notes have been preserved.

symptoms; 2 of severe inflammatory disorder of the intestines, one of which terminated fatally with disease of the liver; one, the case of tricocephali, occurred in a child æt. 4, who died of fever, and in whom several of these entozoa were found lodged in the cæcum and appendix vermiformis. As in none of these 7 cases did the principal affections appear to be either maintained by the presence nor terminated by the removal of the entozoa, no further notice of them need here be introduced. Of the remaining 10, one was attended with epilepsy, three with chorea, one with tremors of the muscles, one with symptoms of cerebral congestion (!) and four with various symptoms, direct or sympathetic, but of no great severity. As in each of these latter ten cases the concurrent affection seemed to depend more or less upon the presence, at some period, of the entozoa, and in most of them readily subsided on their removal they may with propriety be here reported as proper cases of parasitical affections.

Accompanied by Chorea—all female patients. In 3 out of 6 cases of chorea, worms (ascar. lumbric.) had been passed from the intestines. Two out of the 3 patients had just reached the age of puberty; menstruation in one occurring for the first time during convalescence from the disorder and while taking chalybeate medicines. In the other, the menstruation was normal, but only recently established. The third, aged 13, had never menstruated. In none of the three was there much general disorder of the health nor even of the digestive functions, slight emaciation with discoloration of the countenance being principally remarked. The chorea affected both sides, and was of considerable virulence in each case. In none of them did purgatives with oil of turpentine alone succeed in controlling the chorea, although they might have dislodged the worms; but in two out of the three cases the chorea gradually disappeared in the course of three weeks or a month under the use of chalybeates with the shower-bath; but neither, on the other hand, did these last-mentioned remedies check the chorea till the worms had been removed. In the third case of the child under the age of puberty, chalybeates had no effect, but recovery ensued on the use of the shower-bath with an occasional aperient. From these three cases then it would appear that, if the presence of ascar. lumbricoid. in the intestinal canal be adequate to produce the irregular movements of chorea in the first instance, the convulsive affection may be subsequently maintained without their presence, it would appear probable that some such predisposing condition as the epoch of puberty, and family tendency (the sister of one had been similarly affected) is necessary, as a concurrent cause in the production of chorea.

Accompanied with Tremors.—The history of the case thus circumstanced, was briefly the following. A girl, æt. 11, had for more than two years been in the habit of voiding ascar. lumbric. at various intervals. A short time after their first appearance she fell out of a cart, but made no complaint at the time; in a few days she became affected with tremors of the upper extremities, such as continued at the time of her admission at the hospital; they had left her for periods of a month or more since their first occurrence; these tremors ensued only on her holding or grasping any thing in her hand; there were none of the irregular movements of chorea; her health did not otherwise appear to suffer. During the fortnight she remained under treatment, which consisted in giving ol. ric., ol. terebinth, and ferri subcarb, worms were occasionally voided, and the tremors had disappeared—the case was subsequently lost sight of.

With Epilepsy.—A robust young man, æt. 21, had been subject to epileptic fits for rather more than twelve months, sometimes daily, sometimes at intervals of five or six weeks; three or four months previous to his admission he had passed several worms of the species ascar. lumbric., and only three days previously had voided an immense number at a single evacuation, according to his own state-

ment as many as 100. He had no fit since this occurrence, neither was there any return of epilepsy during his continuance for some time in the hospital on account of a different malady. The fits were generally preceded by an attack of rigors, and followed by headache.

With Symptoms of Cerebral Congestion.—A labourer, æt. 35, complained of pain in the left temple, noise in the left ear, vertigo and habitual drowsiness; his bowels were alternately loose and bound; his meals unsatisfying—he was cupped at the nape of the neck, blistered between the shoulders, and had a calomel and jalap purge, which relieved the cerebral symptoms; during twelve days he continued to take slightly aperient medicine, when it transpired that he had lately passed large numbers of ascarides: the same treatment was continued with the addition of bitter enemata: in another week he was free from complaint. One of the remaining four cases, a case of ascarides, was somewhat similar to the foregoing. The patient was a man æt. 60; he suffered intense headache, and had considerable gastric disturbance. Sulphur electuary and bitter enemata removed the ascarides, but the other symptoms did not immediately subside, but yielded subsequently under the use of the decoct. aloes comp.

The remaining three cases need be but briefly noticed—two of ascarides—one occurred in a delicate woman æt. 24, during lactation, with a tendency to syncope and some gastric disorder, she recovered on weaning her infant, and taking pil. hyd. and aloes in small quantities with the use of bitter enemata—the other was of a child æt. 2., with constipated bowels; the complaint yielding to the use of hyd. c cret. and ol. ric. The remaining case was of asc. lumbric. occurring in a scrofulous feeble child of an unhealthy mother and was attended with some headache, disturbed sleep, and unnatural appetite, and constipated bowels; the child recovered under the use of gentle purging with a simple application of leeches to the head.

Diarrhœa.—Diarrhœa may serve as the connecting link in this arrangement, between those disorders of the intestines, in which there was no reason to apprehend the circulation of the blood in them to be augmented, nor even there to have been any congestion of the bloodvessels; and those affections, in which one or other of these conditions might fairly be presumed to be present. For cases of diarrhœa might probably belong to one or other of these classes according to circumstances, although it is not easy to decide always from the symptoms, to which category each individual case may belong.

General Statement.—Excluding those cases in which diarrhœa was present merely as the common attendant of the continued fever of this country; and also those cases, in which it occurred, only as the accompaniment of the advanced stages of phthisis; this disorder was not very frequent, compared with other intestinal affections; not amounting to more than 1.09 per cent. on the admissions of the two years, (not more than half as common as the cases of constipation.) In 1817 it constituted 0.61 per cent. of the male, and 1.54 per cent. of the female admissions, and was nearly equally distributed between the town and country patients.

Analyses of Cases.—The cases falling to the charge of the author during this period not exceeding 27, scarcely admit of more than a brief notice. Few as they were however, they may serve to illustrate the great variety of conditions under which diarrhœa arises: since in only 12 of the 27 cases could it be regarded as an idiopathic primitive disorder of the bowels themselves, originating independently of any predisposing morbid conditions of other organs or of general constitutional disorder. In the remaining 15 cases the diarrhœa might, as appeared from the history of the cases be attached to one or other of the following

conditions—a cachectic state of the tissues of the body—phthisis in its early stage—the aguish diathesis, (in which the diarrhœa alternated with attacks of ague,) parturition, weaning, dentition ; derangement of the liver ; uterine disorder—erythema nodosum. With regard to the nature of the discharge from the bowels, the usual varieties occurred, without any apparent relation to the nature of the predisposing cause, except where the liver was evidently implicated, in which case the stools were either yeasty with an excess, or pale with a deficiency of bile. The presence of blood in the evacuations was not infrequent, as it was noted in 5 of the 27 cases. Cases in which there was a fixed tenderness referrible to some portion of the intestinal tract, are not here included, as belonging more properly to pure enteritis, in which disease diarrhœa, if present, for the most part alternated with constipation.

In almost all the cases the functions of the stomach were materially impaired —nearly in one-half vomiting occurred at some period of the disorder: redness of the tongue was observed in but three instances. Thirst was more frequent and it may be noted that this symptom was by no means in proportion to the degree of pyrexia present ; indeed it was remarked occasionally to be more urgent where there was least disturbance of the general circulation, and it appeared rather to be the result, as in cholera, of the excessive drain of fluid from the canal. In one case it was much complained of, at the time the tongue continued remarkably moist.

Extreme frequency of excitability of the pulse was the only noticeable derangement of the circulation in about one third of the cases ; in about the same number the disorder commenced by a smart ephemeral fever, or slighter febrile accessions supervened repeatedly during its course, or more or less hectic was uniformly present. In the remainder there was scarcely an appreciable disturbance of the general circulation. These various states of the circulation seemed to occur indifferently under any of the varieties of the discharge from the bowels ; with the exception that in all the cases, but one, of sanguinolent diarrhœa, the general circulation was more or less disturbed. The derangements of other systems, of the nervous especially, were not so frequent or so prominent, although of the same character, as in the cases of gastric affections.

Treatment.—Notwithstanding this diversity in the predisposing and exciting causes, and in the character of the diarrhœa itself, the treatment by which 24 out of the 27 cases (the remaining three not being followed to their termination) were, both the acute and the chronic, conducted in no long time to a favorable issue, was more uniform than might have been anticipated. Opium in small doses in the form of Dover's powder, for the most part combined with the same quantity of hydr. c̄ cret., repeated more or less frequently according to the number of the stools, was the remedy in which most reliance was placed. The presence or absence of fever did not seem to affect its usefulness : neither did the nature of the alvine secretions demand more attention in this respect. The liquor calcis was found a valuable auxiliary to this the principal remedy. Astringents and the common chalk mixture were rarely employed, though occasionally with benefit. When recent, which few of the cases were, the diarrhœa was sometimes effectually checked by rhub. and the pulv. cret. comp. c̄ op.

Enteritis and Colitis.—The next subdivision of cases to be noticed, was contradistinguished from the foregoing by the occurrence of fixed pain with more or less tenderness over some limited region of the abdominal cavity and by further evidence of the vascular system of the intestinal canal being interested, as furnished by the good effects resulting from general or local bloodletting. To these the title of enteritis or colitis appeared appropriate, in which some portion of the canal was regarded as in a state of inflammation, including the corresponding portion probably of the peritoneum. The cases in the general practice of

the hospital were too few for a statistical account to be given of them—the present remarks relate to six only, under the charge of the author during this period. Exclusive of the fixed pain and tenderness, the symptoms observed resembled those already noticed in the cases of other intestinal affections. In two only could any exciting cause be assigned; one appearing to originate from difficult parturition; the other from drinking cold water during a state of fatigue and free perspiration. Diarrhœa either did not exist or alternated with constipation: the stomach was usually disordered, much as in the preceding cases; vomiting being frequent. Redness of the tongue, when present, occupied the centre rather than the margins, which is in contrast with the cases of gastric affection. In one case the attendant fever much resembled ordinary continued fever; the principal circumstance, distinguishing it from the latter, being the predominance of the local symptoms, with which the patient himself was pre-occupied. Local depletion by leeches, and in the case just alluded to, venæsection, were the remedies chiefly employed, with gentle means for procuring free action of the bowels in the cases attended with constipation, and alternate doses of mercury and ipecacuanha in those accompanied with diarrhœa. In one chronic case, in which powerful antiphlogistic remedies had been previously used, the cure was completed by a seton inserted over the seat of tenderness, combined with occasional aperients.

Hæmorrhoids.—Before concluding the section of cases in which the functions of the mucous membrane of the intestine were chiefly interested, accompanied by local vascular derangement; some mention should be made of cases of hæmorrhoidal affections. But few patients comparatively apply for relief for this affection alone; two cases only occurred during this period in the practice of the author at the hospital; one in a female approaching the climacteric age and after prolonged lactation, and was accompanied by diarrhœa; the disease in this instance yielded to gall ointment and the subsequent use of chalybeates—the other was the case of a man aged, 40 and was attended by moderate constipation, during the treatment for which, salivation having accidently occurred, he recovered from the hæmorrhoidal affection.

Of the cases hitherto reviewed of disorders of the stomach or bowels, amounting to more than 200, the notes make mention of hæmorrhoids in six only, all females: from which it may at least be inferred that they were rarely present as a prominent or troublesome affection. The ages of these six varied from 35 to 65—with the exception of one, all had borne children; and all the bowels had been more or less constipated; in one the liver was much disordered; another had been long subject to worms (asc. lumbric.); the affection in another already mentioned came on during prolonged lactation.

Scirrhus of the Rectum.—A single case of annular scirrhus and stricture of the rectum may be just alluded to (although not conducted to its final issue) on account of nitric acid, and afterwards small doses of sulphate of copper having been found to improve the alvine secretions, which for a considerable time consisted of shreddy sanguinolent mucus of a chocolate color, aggravating in a great degree the sufferings of the patient.

Peritonitis.—This disease, including both its acute and chronic forms, constituted during the years 1836-37, only 0.40 per cent. of the registered cases in the hospital.

The notes of two cases only furnish any matter worthy of notice. One of these occurred in a female æt. 27, and was a case of great severity. The peritoneal attack came on eight days after the patient's getting wet in the feet, and remaining in that state the rest of the day. In the interval she had been sensible of no indisposition: she was suckling an infant four months old at the

time; and notwithstanding bloodletting was largely performed, followed by leeching, no diminution took place in the secretion of milk, and she was enabled to continue nursing throughout the attack. The treatment was not begun till the 3d day; copious V.S. leeches, moderate purging with neutral salts, effected her recovery. In another case the peritonitis came on after parturition, the patient having suffered much during pregnancy from local pain in the abdomen. It assumed a chronic character, and appeared to occupy principally the hypogastric region: micturition was performed with great difficulty; violent vomiting was also a prominent symptom, which yielded to a blister to the epigastrium; the peritoneal inflammation had been controlled for a time by mercurial inunction, but afterwards became complicated with gastro-enteritis, rendering the prognosis extremely unfavourable—in this state she left the hospital at her own request.

Abdominal Tumor.—A case, incomplete in its history of moveable tumor in the abdomen, may be noticed for some peculiarities attending it. It was of a woman, æt. 44, previously healthy, and who had borne nine children. The tumor first began three years previous to her admission, following her last confinement. At the time of her admission, there was a large and very indurated, but painless tumor, occupying the epigastrium. Subsequently it became very tender, when a severe attack of intermittent fever, of a typhoid type, supervened. The patient would not continue in the hospital. The intermittent was not in the least under the control of quinine.

DISEASES OF LIVER.

The entries in the registers of cases of disease of liver, inclusive of jaundice, amount to about 1 per cent on the total admissions during the years 1836 37, The cases, of which the notes have been preserved, are 14; and may be divided, 1st, into those in which jaundice was the principal feature, (4). 2ndly, those in which sanguineous congestion or inflammation of the liver seemed the predominant pathological condition, (5); and, 3rdly, those cases of organic disease of the liver as inferred from the symptoms during life, or ascertained by necroscopical inspection, (5).

Icterus.—The 4 cases of jaundice may serve to shew, from the diversity of circumstances under which it originated, its indeterminateness as a basis for a nosological distinction.

In case 1, the patient, an unmarried female, æt. 22, had been subject to attacks of jaundice every Spring and Autumn for four years; during each attack the catamenia were suspended; the alvine excretions were natural, neither was there any abdominal pain or local tenderness; the last attack yielded promptly to purging with *pil. hydrarg. and aloes*, and the use of *decoct. tarax.* with *supert.* of *potash.*

In case 2, of a female æt. 50, the jaundice appeared to be evidently produced by obstruction to the passage of bile into the intestines, through the biliary ducts, as declared by the character of the stools, and other symptoms. The disorder had lasted two years, and had been attended with repeated attacks of retching and occasional vomiting of colorless fluid. These attacks, accompanied by pain "drawing her double," were followed each time by a deeper hue of the jaundice. Latterly a spontaneous and more violent attack of vomiting, in which bile was rejected, was followed by manifest amendment; after, which the disorder was entirely removed by emetics, with small doses of calomel, rhubarb and aloes, and mild mercurial inunction.

In case 3, of a blacksmith, æt. 40 with the same deficient passage of bile into

the intestines, similar disorder of the stomach, as marked by nausea and retching, and the same chronic character of the affection as in the last case; there was an absence of the spasmodic pain in the epigastric or hypochondriac regions, and, in its place, a tensive pain across both hypochondria, with great resistance in the right hypochondrium and dulness on percussion in the lower region of the thorax on the same side. In this case, therefore, the obstruction was probably in the parenchymatous or secretory structure of the organ, rather than in the excretory ducts, as in the last case. In this instance the general disorder was much mitigated by *pil. hydr. hyosc. and calumba;* and a further improvement ensued under the trial of hydriodate of potash, but the jaundice was not removed.

The 4th case of jaundice occurred in a shepherd, æt. 21, having malformation of the chest, which projected in front, and in its contour resembled the fœtal thorax. The jaundice came on some time after a rheumatic attack, and was attended with cardiac symptoms, especially a loud bellows sound, with the "fremissement cataire." The right hypochondrium was tense and painful, and there was pain in the right shoulder: there was no deficiency of bile in the alvine excretions. But little effect was produced on the disorder by mercurial remedies, and the history of the case remained incomplete.

Sanguineous Congestion, or Inflammation of the Liver.—These were cases (5) which differed from the preceding in the absence of jaundice, while they presented a considerable affinity with them in other circumstances, such as—in the condition of the right hypochondrium which, in both classes of patients, for the most part the seat of some morbid sensation, in the present instances was more decidedly tense, painful and tender—in the occasional occurrence of spasmodic pain in the upper part of the abdomen—in the sympathetic affections of the stomach viz. nausea and vomiting (in 3 out of the 5 cases). The bowels were more constipated than in the preceding cases, and the constipation more frequently alternated with diarrhœa. The general conditions of the system, under which the disorder originated, were as various as in the cases of icterus. One of the patients was a labourer, æt. 58, who had left India eight years previously, having suffered from "bowel complaints" during the latter part of his residence there, but had since till the last six months enjoyed good health. Tenderness on pressure of the cartilages over the right hypochondrium, nausea, vomiting, spasmodic pain in the epigastrium, constipation alternating with relaxation of the bowels and tormina, formed the principal symptoms, and which yielded to leeches, blisters, and small doses of calomel or pil. hydr. with occasionally olric.—A second case occurred in a married woman æt. 27, of a delicate constitution and while suckling an infant eight months old. The symptoms were such as described in the last case with more disturbance of the circulation characterised by hectic. In this case the urine was loaded with the colouring matter of the bile, although the skin was not discoloured. She recovered under the use of the same remedies with the addition of taraxacum and quassia. Two other cases occurred in robust unmarried females of the respective ages of 20 and 24, in which the disorder was attended with less disturbance of the stomach but more torpor of the bowels, the pain and tenderness in the right hypochondrium being the same. The same remedies, including leeches to the hypochondrium, speedily induced recovery. The fifth and remaining case occurred in a robust girl, æt. 12, in whom all the above symptoms existed in a greater degree, with additional disturbance of the brain, producing head-ache, vertigo and drowsiness. In this case V. S. was employed in addition to the other remedies; the vomiting was controlled by a blister to the epigastrium; the patient recovered in about a fortnight.

Enlargement or other Organic Disease of the Liver.—The cases, under this

head, were too various in the nature of the organic disease or too complicated with diseases of other organs, to admit of their being viewed synoptically, but individually possessing some points of interest, may be briefly noticed as distinct histories.

CASE 1.—*Enlargement and Induration of the Liver, with deficient secretion of bile into the intestinal canal, terminating in recovery under the use of mercurials and iodine.*

W. B., ætat. 14, labourer, on his admission, April 19, was much emaciated, with a harsh dry skin, slightly tinged, as were the conjunctivæ, with yellow; the cheeks and lips, and hands, were of a deep purplish hue; the tongue was white, the appetite gone, and the stools of a light ochry color. The liver was distinctly felt reaching to the level of the umbilicus on the right side, and appeared indurated, with tenderness of its edge. The pulse was 120, thready, but soft.

He had been ill fifteen weeks, being first taken with pain in the right side—the jaundice had been deeper.

Mercurial liniment was ordered to be applied twice daily to the right hypochondrium and a grain of calomel with gr. ¼ of op. given *n. et m.* with *inf. quass. ter quotidie*, and a milk diet. By the 2nd of May, up to which time these remedies were continued, he had much improved, the induration and enlargement of the liver were not easily perceptible; the urine which had been very high-colored was much paler, the stools contained more bile and the gums were slightly swollen and tender. The same remedies were continued at longer intervals and he was allowed meat on alternate days, but which was found not to agree and was discontinued to a later period. During three weeks there was a further slowly progressive improvement with occasional relapses of pain and tenderness in the right hypochondrium. Hydriodate of potash (gr. j. and afterwards gr. ij. *ter quotidie*) out of camphor mixture was then added to the mercurial remedies, which were still further reduced, and this combined plan was continued till the 17th of June, by which time the liver had become greatly diminished in size, and had nearly retreated to the right hypochondrium, and there was no tenderness although there remained some induration: the stools were natural and the complexion had lost its venous hue. The appetite had long since improved, the stomach tolerated meat, and the boy had become fat—by the 23d of the same month he was discharged apparently well. It may be mentioned that this individual was the brother of the patient whose case was reported in the first part of these *Contributions*, as a solitary instance, among the cases of phthisis, of the physical and other signs of tuberculization of the lung having entirely disappeared in the course of two years.

CASE 2.—*Enlargement of Liver, with jaundice and absence of bile in the alvine secretions—subsequent contraction and induration of the organ with growth of a large cartilaginiform cyst, attended with ascites and general dropsy, terminating in two years from the commencement of the disorder in death.*

The heading of this case comprises the principal points of interest in its history, which was principally remarkable from having afforded the opportunity of noticing the conversion of an enlarged liver into one of normal dimensions but greatly indurated texture. The period of the commencement of the growth of the cyst could not be clearly assigned, nor the question decided whether it preceded or followed the other hepatic disease. The patient was a girl, æt. 12, at the time of her decease. The liver, when she first came under observation (Aug. 17, 1836), reached as far as the umbilicus; she had then been ill 12 months, and was jaundiced and had very light coloured evacuations from the bowels. Mercurials and iodine did not increase the secretion of bile into the intestinal canal; but for a time this was effected by a repetition of emetics; no further amend-

ment ensued and the patient left the hospital, Sept. 10, and the case was lost sight of by the author till he was invited to attend the post mortem examination on the 20th of Aug. 1837. She had for many months been labouring under ascites to a vast amount with infiltration of the lower extremities, and extreme emaciation of the upper portion of the body.

Post-mortem Examination.—The liver was not larger than natural, and its peritoneal surface pale; its substance was rigid, and its section mottled with deep-red points; the gall-bladder was full of bile—under its inferior surface and opposite the longitudinal fissure and attached to the liver, was found a cyst of the size of two fists, having firm cartilaginous parietes of the thickness of a half-crown piece, containing perfectly clear and colorless fluid, and which were lined with a soft membraniform white deposit, apparently not organically connected with the cyst, as it readily collapsed into its cavity on the escape of the fluid contents. The internal surface of the cyst, on the removal of the membranous deposite, was rough and of a deep saffron-color, interspersed with spots of a still darker color. The mucous membrane of the intestinal canal presented a glairy mucilaginous deposit on its surface A thymus gland was found of the size met with in the infant. The heart was very small but healthy, as were the lungs, but the cavity of the thorax was surprisingly contracted.

Case 3.—*Hypertrophy of Liver, with large hydatid cyst imbedded beneath its convex surface. Insidious attack of central pneumonia of the right lung, reaching the suppurative stage, and producing a fistulous opening into the pleura, with pneumothorax, and causing death by inflammation of that membrane.*

C. W., æt. 43, labourer, was admitted I. P. Aug. 11, 1837. He had been ill six months, and during that time had emaciated. He had cough and three or four times had had slight hæmoptysis, but his principal complaint was of pain under the right hypochondrium and extending to the right shoulder. The pulse was small but not accelerated, but he had frequent chills and sweats The appetite was impaired and digestion difficult, but stools were stated to be natural, while the urine was of the color of porter. The thorax was observed to bulge externally in the inferior part of the right side, where percussion was dull and the respiratory sound absent. A moderate mercurial treatment was adopted without any material effect for a week, when on the 18th he was suddenly seized with rigors and became slightly delirious; subsequently the breathing became very laborious and distressing, from acute pain in the right hypochondrium increased by pressure of the cartilages and with much tension and heat of that region. He had likewise vomiting and the pulse had become quick and sharp and hard; by the evening of the following day the space over which the respiratory sound was absent and percussion dull in the right side of the chest had much increased. During this period antiphlogistic means by blood-letting, general and local, had been largely employed, and afterwards acetate of morphia given. The pain and suffering from laborious respiration had then entirely and rather suddenly subsided. The next day (the 20th), the chest was observed to be unusually sonorous where previously it had been quite dull on percussion, the respiration continuing inaudible in the same situation. In this state he continued two days, free from pain or much suffering, but with symptoms of gradual collapse and died on the 22d.

Post-mortem Examination 5 hours after Death.—The bulging on the right side of the chest was very perceptible. On incising the intercostal spaces on that side a large quantity of fetid gas escaped with a slight explosion. On removing the sternum the right lung was found greatly contracted and pushed back against the vertebral column, the surface of the lung was concealed by a thick layer of soft yellowish-white membranous coagulum; the same description of deposit lined the whole of the left pleura; the cavity of the pleura was intersected by soft bands of the same material, and contained about a quart of opaque fluid,

slightly colored. On exposing the lung and separating the cleft between the upper and middle lobes, a fistulous opening was discovered, from which a large quantity of semi-fluid matter escaped, of a chocolate colour; this opening led to a large irregular cavity in the center of the lung, in which the pulmonary tissue was softened down to the consistence of pulp: the parts of the lung forming the boundaries of the cavity, though not diffluent, were dark, half-decomposed and easily reducible into pulp by pressure between the fingers—the cavity was intersected by bands of pulmonary tissue in the same state. The rest of the lung appeared condensed by pressure, being tough but pliant. A small insulated mass of cretaceous matter was found in the upper lobe in front—the left lung and the heart were healthy.

On exposing the abdominal viscera the anterior surface of the liver reached below the umbilicus and filled up the epigastric region. Its enlargement had also pushed up the diaphragm into the thorax and caused the bulging—the right lobe was altered in form superiorly, its convexity being much increased (bombée). In this situation was found a large cyst imbedded in the lobe, of the size of two fists and filled with hydatids (acephalocysts, some collapsed and a few entire, and of the size of pigeon's eggs or walnuts. The walls of the cyst were in some portions cartilaginous. The surrounding tissue of the liver seemed healthy; the gall-bladder was full of a greenish-yellow viscid bile.

CASE 4.—*Vomiting and purging with brief intermissions for thirteen weeks; stupor the last few days preceding death. Gangrenous and carcinomatus tumor enveloping the gall bladder, and communicating by two distinct ulcerated apertures with the duodenum and transverse arch of the colon—disease of the mucous membrane of the duodenum and colon—exemption from disease of the jejunum, and ilium but contraction of their calibre (the aliment having probably passed directly from the duodenum into the colon)—copious effusion under the arachnoid.*

M. G. æt. 64, nurse, was admitted Nov. 22, 1837, having had diarrhœa with frequent vomiting for nine weeks. The tongue was dryish and cracked, and the appetite bad. The matter vomited often green and the stools dark—the pulse small and very irregular—features sunken. A defined, roundish, indurated, but painless tumor was detected below and extending beneath the right hypochondrium. From the period of her admission to the 18th of the following month the same symptoms continued with occasional intermissions and but little controlled by the remedies, viz. mild mercurials with small doses of opium, opiate enemata and tonics. The tumor had latterly become very tender. On the 18th drowsiness came on; the diarrhœa had increased and she appeared sinking, but again rallied during the day, with roaming at night, till the 25th, when she fell into a stupor from which she could only be momentarily roused—this state continued till the 29th when she died.

Post-mortem examination nine hours after death. No emaciation.

Head. The brain was small and firm; the arachnoid was raised up in the form of a bladder from the convolutions and was slightly opaque—from 6 to 8 ounces of fluid escaped from beneath it—the convolutions were separated by the interposition of the fluid. The surface was rather exsanguine.

Abdomen. Accumulation of fat in the omentum. The liver in its general aspect presented the ordinary nutmeg appearance at the lower margin of its right lobe, under the concave surface at the great longitudinal fissure, and extending to the corresponding portion of the transverse arch of colon and the first and second portions of the duodenum, was found a dark, friable mass of disease, which was ruptured by a slight accidental violence in examining the part, and displayed a fetid, dark gangrenous substance, presenting the appearance of grumous blood being intermixed with the disorganized structure of the liver and with portions resembling soft carcinoma; the gall-bladder was enveloped in this

diseased mass, but was merely softened and had its internal surface tumefied into nipple-shaped excrescences. From the midst of this softened mass, two ulcerated openings led into the descending portion of the duodenum and the transverse arch of the colon—adhesions prevented any communication with the peritoneal cavity. In the vicinity of the ulcerated openings the mucous membrane of the intestines was diseased; with respect to the duodenum the disease occupied its first and second portions and a part of the third, which were of their usual calibre; but the remainder of the small intestines were free from disease and much contracted in their diameter. The disease of the colon extended both ways, backwards to the cæcum and onwards throughout its whole length and even into the rectum. The disease consisted chiefly of a dark ecchymosed appearance of the valvulæ conniventes of the duodenum and the longitudinal plicæ of the colon, with thickening of the submucous tissue. This mucous membrane of the stomach was not obviously diseased, but the change in its appearance from the pylorus to the duodenum, where the opening existed from the softened tumor, was very abrupt.

Chest. The only morbid appearance discovered in the chest was an atheromatous, and in one spot earthy deposit at the commencement of the aorta, and an interstitial pliant deposit in the mitral valves.

Case 5. *Long continued ague with chronic diarrhœa—enlargement and softening of the liver with biliary calculi impacted in the gall-bladder—the products of peritoneal inflammation of the surface of the liver and intestines—internal surface of the stomach coated with tenacious layer of mucous—morbid appearances denoting chronic colitis, with ulcerations in the process of healing.*

E. M. æt. 36, widow and plat-worker, was admitted Nov. 2, 1837. She had had various attacks of ague since the preceding March—the type was at first quartan, but had become quotidian. During four months preceding her admission she repeatedly had attacks of diarrhœa, and, for two months, had suffered from pain in *left* hypochondrium, increased after each paroxysm of ague. At the period of her admission she was still labouring under ague, profuse diarrhœa and pain, with tenderness of the left hypochondrium; and presented a wan, sallowish aspect—appetite and digestion were at that time not greatly impaired. A blister was applied to the left hypochondrium and a few grains of sulphate of quinine directed to be sprinkled over the blistered surface—at the same time, a combination of hyd. c cret. and pulv. ipec. comp and liquor calcis, were used to combat the dirrahœa. Under this treatment, the ague ceased and the diarrhœa was checked; but, on the 9th, a large but superficial slough had formed on the blistered surface, and she complained of pain with tenderness at the epigastrium, and had a very anxious look. The slough separated in a few days, and left an extensive granulating and suppurating surface; by this time (9th) the tongue had become very dry in the centre, and viscid and red, and the epigastric pain continued. On the 14th the diarrhœa again returned; from this time to the 16th of the following month, she had frequent relapses of diarrhœa, for which various remedies were used for the most part ineffectually, with the exception of the sulphate of copper, which given in ¼ of a grain doses every four or six hours had a considerable effect in controlling this state of the bowels. During this time her general condition varied very considerably, the appetite sometimes being good and the stomach capable even of digesting animal food in small quantities without aggravating the symptoms; while at other times food of any kind could scarcely be tolerated, and the pain in the epigastrium and left hypochondrium, with a very red tongue, returned.

On the 16th of Dec. the tongue again became dry and glabrous, and the abdomen was tense and resonant, with pain and tenderness in the *right* hypochondrium and right lumbar region. From this period the most urgent symptoms continued to be referrible to this region of the abdomen, with a relapse of pain in the epi-

gastrium, and afterwards a return of profuse diarrhœa. This state became gradually worse, till these symptoms, with the exception of the diarrhœa, were exchanged about the 6th of January, for those of sinking and collapse, which terminated in death on the 18th; during this period (from the 16th Dec.) little relief was derived from any remedies, a suppository of opium alone mitigating the diarrhœa—at an earlier period a few leeches had relieved the abdominal pain.

Post-mortem examination, nine hours after death.—Great emaciation—œdema confined to the right lower extremity. The liver enlarged and reaching as low as the umbilicus, was covered with patches of soft adventitious membrane; the structure of the liver was soft, friable, and pale. The gall-bladder was contracted and elongated, and entirely filled by seven or eight gall-stones of the size of small marbles, sacculating the bladder. The small intestines, extremely dark, were glued together by cellular adhesions: from one to two pints of fluid were contained in the peritoneum. The spleen was of natural size and consistence, presenting only on its surface, slight, thin and white patches. The mucous membrane of the stomach was besmeared with a large quantity of mucus, as were the valvulæ connivents with mucus tinged with bile. The cæcum, ascending colon, and transverse arch presented a healthy mucous surface: there was however an asc. lumbric. in the cæcum; and the arch was much dilated. The descending colon and rectum were greatly diseased—the coats being much thickened; the change from healthy to unhealthy mucous surface was quite abrupt, presenting a clean line of separation. The internal surface presented a dark, thickened, uneven condition of the membrane, with insulated fungiform portions; the whole patch which occupied the entire calibre of the descending colon, sigmoid flexure, and the greater part of the rectum, had the appearance of ulceration in the process of healing, being below the level of the adjoining healthy mucous surface. The large intestines contained a quantity of solid fæces. The neck of the uterus was of cartilaginous hardness.

ON THE BEST MEANS OF APPLYING PRESSURE TO THE UTERUS AFTER DELIVERY.

To the Editors of the Medical and Chirurgical Review.

GENTLEMEN,—The important principle of making such pressure on the uterus as will ensure its contraction immediately after the birth of the child, in every case of labour, is at length so fully established as to be received throughout the profession as one of the axioms of scientific midwifery. Every practitioner carries out this principle by some one or other of various methods which suggests itself to his mind,—from the simple pinning of the long napkin to the formidable tourniquet and rolled pillow. With the ulterior desire of eliciting further mechanical improvement, I proceed to give an explicit description of two bandages which I have long used in my practice; and some medical friends, whose judgments I highly value, have tried them with the greatest satisfaction.

In forming these bandages my first object was to make pressure on the region of the uterus by a *firm unyielding substance;* because, by this means, the contraction of that organ was found not only to be more readily produced than by a similar degree of force applied by means of a bandage composed of linen or of any soft substance, but, having been so produced, was more readily maintained. To this principle we must refer the signal benefit derived from pressure by the firmness of the hands in cases of sluggish uterus; but hands and arms soon tire at this employment, and consequently the degree of pressure

necessary to the complete contraction of the organ, instead of being steadily continued, becomes relaxed, and hæmorrhage occurs; or if it has been momentarily suspended, is renewed.

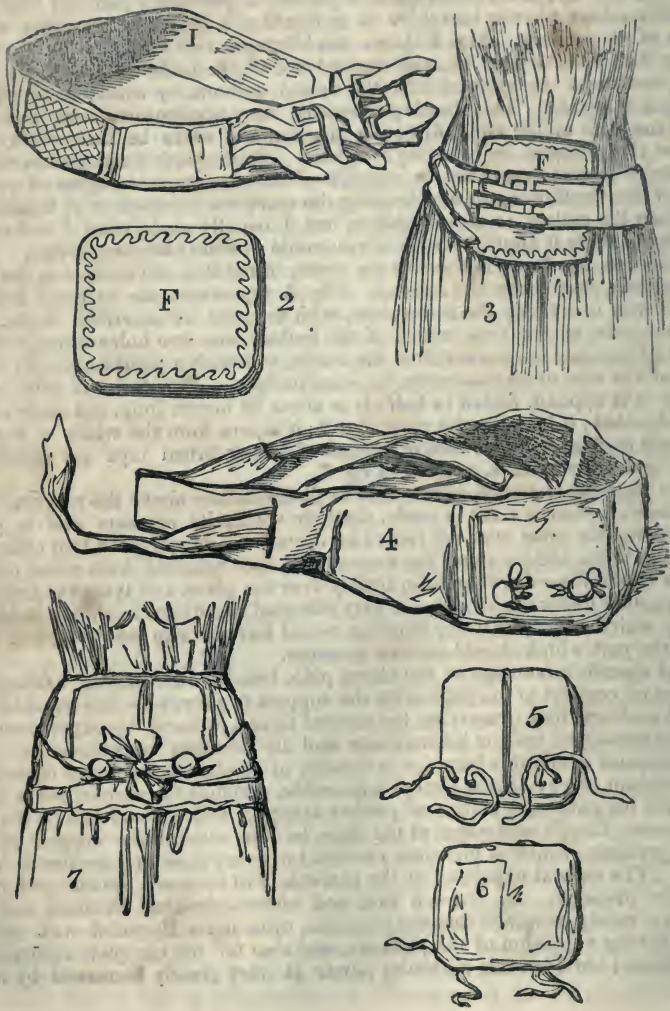
Figure 2, in the subjoined engraving, represents a piece of mill-board, obtained from the stationer, seven inches by eight, padded on the inside with two layers of wadding, and covered with flannel or keth flannel or kerseymere. This plate has been previously divided down the middle as seen in fig. 3; then united by pasting a strip of leather on each side, so as to form a joint; thus enabling it to be folded into half its compass, like a closed book; and, with the band, fig. 1, wrapped round it, to be conveniently put into the pocket. The band, fig. 1, which is made of variable length to suit the different dimensions of different females, is composed of webbing, three inches wide; is furnished with two buckles, and three sets of straps to regulate its pressure; and has four inches of India-rubber web let into it, so as to combine a degree of elasticity with the force of its pressure. Fig. 3 shews the bandage duly applied; the band being under the crests of the ilia, and carried round the hollow of the back, just at the junction of the sacrum with the spinal column, by which it is prevented slipping upwards. This bandage, from its easy application, I use immediately after the birth of the child, directing the nurse, if there be hæmorrhage, to increase the pressure by buckling it tighter. This simple bandage answers well for every purpose proposed, is capable of exerting a great degree of pressure, and of thus facilitating or accelerating the complete contraction of the uterus.

When the patient is comfortably in bed, I usually apply what I call my sash bandage: were it applied previously it would probably become soiled. This is represented, fig. 7, applied under the crests of the ilia, and carried to the hollow of the back, just above the sacrum. Fig 5 represents the exterior, and fig. 6 the interior of exactly the same plate, with the joint as described in fig. 2; but on each side, within two inches of the bottom, are two holes through which a piece of tape is seen passed from the inside, to attach a pearl button on the outside of the size of half-a-crown, as seen in fig. 4. Fig. 4 shews this bandage before it is applied, folded in half: it is about 30 inches long, and made of white jean doubled; it incloses the plate, fig. 2; it tapers from the width of the plate, towards each end, where twelve inches of strong broad tape are attached for tying under the buttons, as seen in fig. 7.

The bandage is sloped downwards to fit the hollow above the sacrum, and in its posterior portion a slit is made, through which its opposite end is passed. By placing the plate over the region of the uterus, carrying the two ends of the bandage to the hollow above the sacrum and then bringing them round under the crests of the ilia—drawing them tightly over the plate, and tying the tapes in a firm manner under the buttons—a very effectual resistance is offered to the tendency which otherwise every bandage would have to slip upwards, and recede from the part which should receive pressure.

The specific advantage of the above plan, besides affording an extraordinary degree of comfort to the patient by the support it affords to the relaxed abdominal parietes, thus preserving the natural figure, is found by experience to be the prevention of uterine hæmorrhage and its dreadful consequences. Under the pressure which this bandage is capable of producing, even the formation of a coagulum of any size is almost impossible, and thus the accoucheur is enabled to leave his patient in a state of perfect security, which never can be the case if the uterus, though contracted at the time, be left without the support of some such pressure, which is therefore essential in every case in a greater or less degree. The natural expulsion of the placenta will be much accelerated by systematic pressure. Dr. Ruysch first, and afterwards Drs. Denman and Wm. Hunter, vainly imagined that the musculus orbicularis Ruyschii was self-sufficient for the expulsion of the placenta, and also for the complete contraction of the uterus; but even this muscular power is very greatly increased by the aid

of pressure. I could give the detail of several cases of retention of the placenta, which I have recently seen in consultation, where the uterus sympathizing with the general system, after a protracted labour, was in an atonic state. In these cases, as there was no hæmorrhage, I advised the continued permanent pressure by means of my bandage. The inherent muscular power of the uterus, thus assisted, safely expelled the placenta, in every one of these cases, without the introduction of the hand, and without any hæmorrhage. In one or two of these cases the placenta was retained three days and nights without any untoward symptom, and then securely and satisfactorily expelled by the natural efforts. A manifest mitigation of after-pains is acknowledged to be produced by means of these bandages by many females who have previously borne children, and have had no such assistance.



By securing the permanent contraction of the uterus, many cases of puerperal fever may be prevented, for it may be confidently asserted that puerperal fever is frequently produced by a congested state of the uterus. Nine tenths of the diseases of the uterus, especially the chronic and acute engorgements, may be traced to the condition of that organ after parturition, and may be prevented by means of a proper pressure, such as the bandage described is calculated to make.

We have much reason to wish that those who have witnessed the accurate precision with which the various diseases of the uterus are discriminated and treated at the different institutions at Paris, where I am given to understand the most rapid progress has lately been made in this department of our art, would throw some light on this obscure subject. We might then be led to abandon the absurd system of fighting with the symptoms of the disease of the uterus, as though they were in themselves diseases, for the adoption of a rational system founded on accurate knowledge of the various alterations of structure which produce those symptoms.—Your obedient servant,

15, *King's Row, Pentonville,* J. L. Fenner.
June 11, 1838.

"A Crust for the Critics."

To Dr. Forbes and Dr. Conolly.

Gentlemen,—Incessant professional occupation has hitherto prevented me from replying to your illiberal and malicious attack, in your so-called review on my work, The Philosophy of Marriage, which appeared in one of the late numbers of your periodical. For my own part, I should have deemed your criticism totally unworthy of notice, as it is well known by all in the least acquainted with the periodical literature of the medical press in this country, that there was something like an old score, or *quid pro quo*, on your part, to be settled between us, after my former just animadversions upon your pitiful productions. This is now evident from the fact that you, and you alone, of all the medical reviewers, my former rivals, thought it a convenient opportunity to attack my work as soon as I had ceased to be a rival editor, for you durst not have done so before with impunity, as you are very well aware.

It also appears that you have not the common candour of allowing those whom you attack an opportunity of defending their works in your pages, and much less the space, unless by paying heavily for the mere insertion of retributive and just defence; notwithstanding the journals which have, and will continue to have, a far greater circulation than yours, invariably admit the insertion of replies to their criticisms. Availing myself of this liberal privilege afforded by the *Medico-Chirurgical Review*, which, by the way, has a circulation your *precious* Review can never even approximate, in consequence of the injudicious manner in which it was begun, and has been hitherto conducted, I now reply to you.

Had you not started aside from the usual observance of etiquette amongst fair and honorable editors, you would not, as I above intimated, have unwarrantably and maliciously attacked a former editor, solely because he conscientiously censured your productions, on account of their want of any but negative merit.

When you published the first part of the Cyclopædia of Practical Medicine, I felt it my duty to criticise it in the spirit of truth and science; and pronounced it a meagre and spiritless compilation, far below mediocrity, made up, for the most part, of extracts from the old writers, without any useful additions derived from the then actual advanced state of science.

The contributors were, in general, unknown writers, mere literary adventurers, the majority of whom were not versed in medical literature, and evinced but little skill in composition.

These strictures, which were certainly merited, gave you deadly offence. Some more accommodating journalists, it is true, lauded the work at first to the skies, merely to gratify you and the publishers; but even these candid and honest critics were eventually compelled to approve of the judgment I had passed upon it. I again maintain, that no well informed physician in the kingdom will refuse to admit, that many of the articles are badly done, that the work might be reduced to half the size and price, which by the way was the determination of the late Mr. Sherwood, if ever a future edition was required; and that, as a whole, it is far inferior, indeed can scarcely be compared, with the truly learned, practical, and unequalled Dictionary of Medicine, by Dr. Copland. In fact, all acquainted with the French Medical Dictionaries, are disgusted with your production. It is too long-winded—or, to use a French proverb, Ouvrage de longue haleine. Nevertheless, you are, as part owners of the work, incessantly puffing it in your journal: a most disinterested proceeding, truly, on your part, while you are as incessantly either abusing or sneering at the works of able and more judicious writers.

The next ground of offence was announcing it as my conviction, that your Quarterly Journal was, in merit and usefulness, far inferior to the *Medico-Chirurgical Review*, and could never approach it in circulation, in the way it was conducted.

I now ask you, has not my judgment been fully verified? Is the sale of your unfair and heavy periodical, one-half of that of the Medico-Chirurgical Review? According to the Spanish proverb, after having dried up your wine, you sell vinegar—Aviendo pregonado vino, vend vinagré.

Non omnia possumus omnes.

I shall not here advert to my comments upon your professional pretensions to high practice, and certain official situations in this metropolis; they have been duly appreciated by the public, and you are still left in the provinces to enlighten and abuse medical authors in general.

Under all the preceding circumstances, it cannot be very surprising to the reader, that you should abuse my productions, so soon as I ceased to be a journalist, and no longer possessed the means of reply in my own power.

Had you confined yourselves within the limits of fair and impartial criticism of any of my humble works, I should never have complained; but when you wilfully and wantonly misrepresent them, extract parts of sentences, so as to destroy the context, misquote and substitute whole sentences and expressions for others, which you well knew were too ignorant and absurd to be written by me, or by any educated member of the medical profession, I have every right to complain, and to expose your unfair and dishonest mode of criticism, to the contempt and derision of the medical profession in all countries.

Now for examples of your criticism in proof of the preceding charges—

In your review of my edition of Dr. Denman's Obstetrician's Vademecum—you quote the following sentences which are not mine, nor are they in my edition of that work. "Come under the *neck* of the pubes." No. 4. p. 524. I never used such a barbarism as *neck of the pubes*. I do not know such a part of the human body as the *neck* of the pubes, though your *placentæ prævіæ reviewers may*; and I consider that ascribing the use of such a term to me was a malicious insult.

Again, you state—"The ergot of rye," Dr. Ryan says, "will 'always' effect the removal of a retained placenta. This is surely attributing more certain powers to the ergot than it really possesses." I never wrote or said any such nonsensical sentence; and it is scandalously introduced, to enable the stupid and ignorant reviewer to knock down "a windmill of *his own* erection.

Again—"with respect to the 'half ounce' doses of the ergot—we never have heard the medicine was exhibited in such quantity," p. 525. My words are "The maximum dose is ʒiss." p. 68. This is another windmill, the erection of a stult, on whose shallow capacity I have previously commented This I now repeat, as well as my former opinion, that this worthy betrays a gross ignorance of practical obstetricy from the beginning to the end of his review of the Obstetrician's Vademecum. He has, lastly, done me the additional favour of once more misquoting me—"to *breaking down the os uteri* with the finger

Et sic de similibus et de cæteris.

Was there ever such misrepresentation among gentlemen of a liberal profession?

Breaking down the os uteri!!!

Do you call this fair and honest reviewing? I shall leave the profession to judge.

With reference to your review of my work on Marriage, it is not a review, but a virulent attack, and such I am proud to find is the general opinion of those few of the profession who have perused it—men infinitely your superiors in capacity and attainments. You designedly passed over the preface and introductory remarks, which proved the important object of the work, in as much as theologians, philosophers, physiologists, legislatures, and lawyers, as well as the medical profession of all ages in civilized countries, have fully discussed every question relating to the reproductive functions, as well as the laws relating to marriage, bastardy, divorce, seduction, infanticides, homicides, and numerous other crimes, upon which an infinity of questions arise, deeply interesting to every class of society. But to the point. It would seem that you are apt to be intentionally blind or incapable of comprehending the various bearings of the numerous important questions that daily occur concerning abuses of the functions just mentioned, in relation to life, liberty, honour, property, &c. &c.

Damnant quod non intelligunt.

It did not suit your purpose to dwell duly upon the prefatory matter, for it would have totally upset your superficial remarks, and your unjustifiable charge that the work is immoral—though you knew it was the reverse.

According to your sapient dogmas, all works on anatomy, midwifery, law, medicine, morality, political economy, the public press, and even the Bible itself, ought to be suppressed. Now this may be the code of "the little great men of Chichester and Worcester," who fancy they can lay down laws as well as circumscribe the limits of imparting knowledge, but certainly not for men who think for themselves. Your code is unfortunately at variance with the universally-received doctrine at this period of the nineteenth century, namely, the importance of "the diffusion of all useful knowledge amongst mankind." Never did the medical profession or public condemn the diffusion of natural science. I can readily imagine your sardonic grins when I inform you, that notwithstanding your unwarrantable censure, my work has met with the approbation of many of our sound philanthropic medical philosophers, and other distinguished personages, including clergymen of every denomination, with whom you can have no pretensions A large impression, 1500 copies, sold in one year, and I am now, notwithstanding your criticism and condemnation, about to publish a new and much larger edition. How true the French proverb—Il y a des reproches qui louent, et des louanges qui medisent. Some reproaches are a commendation, and some praises detraction. Laudatur ab his, culpatur ab illis. The sure way to be deceived is to believe ourselves more cunning than the rest of the world—to abuse every one with great eloquence and little conscience, or as the Italians render it—"Di grand eloquenza, picciola couscienza"—but we should remember, that curs that are always barking generally get sore ears. Les chiens hargueux ont toujours les oreilles dechirées.

I hope I may be allowed to observe in this place, without much vanity, that there are few who have studied medicine in all its branches, both in this king-

dom and abroad, with more zeal and industry than I have, and that few have evinced more researches in so many different original works. In fact, these have been more than favourably noticed both at home and abroad; while a few hireling pseudo-critics at home, who, like the Swiss amanuenses, readily undertake "what is above or below their capacity," gravely declared that those very works *were the worst ever published*. Nevertheless I must take leave to observe, that not one of these truly impartial and erudite critics has produced a single original work of the slightest value, while most of mine have passed through several editions, both in this and other countries. I mention these facts to shew the high claims of my worthy assailants, either as learned authors or qualified medical critics; most of whom have not had sufficient talents or attainments to produce an original sixpenny pamphlet; while the few of them, who have ventured to appear as authors, and all of them as quondam rival journalists, can never forget or forgive my just strictures and censures upon their paltry productions, and dishonest periodicals. *Hinc illæ lachrymæ*. Hence, reader, the cause of their vituperative attacks.

I now allude to these facts to shew how little I care for unfair or unprincipled medical critics; and also to prove, that their censures have not, in any way, prevented repeated editions of the very works of mine, which they so loudly and unjustly abused and condemned. I may likewise be permitted to add, that my practice far exceeds that of my spiteful and mendacious assailants. Such are the bad effects of unfair and unmerited criticism. As a further proof of the truth and force of these remarks, I have to observe, that there are no three medical editors in this kingdom who have been so unsparingly abused as Dr. James Johnson, Dr. Copland, and myself. Indeed it is my own firm conviction, that partial and malicious criticism has never done myself, nor any other individual, any real injury.

I can aver, after careful and extensive observation and experience, that a more unprincipled and incompetent set of medical critics, with a few honorable exceptions, do not exist than in this country. Did not our infamous, sophisticated, and unchristian libel law, which enacts, "the greater the truth the greater the libel," restrain me, I could enter into details which would fully prove the truth of the preceding strictures.

Suffice it then, to observe, that many of our medical critics allow private feeling, party prejudice, self-interest, and a variety of other bad motives, to influence them in their reviews. They pass over or abuse valuable works, while at the same time, they praise miserable productions, which speedily find their way to the butter-man, the trunk-maker, and "serve to put under pies, to lap spice in, and keep roast meat from burning—quos legunt cacantes."

How often had I, whilst a critic, justly praised really valuable works, which were afterwards censured in the severest terms by most of my contemporaries; and how often had I as justly censured other productions, which they lauded "to the fifth heavens."

It is very painful to me to admit, but it is the truth, that our medical reviewers in general want the talent, erudition, candour, honesty, and impartiality of their contemporaries in France, Germany, Italy, and other European nations, as well as in America and India. Every one knows that there are the most able medical writers and critics in this country, but the latter are very unfortunately the smallest portion.

But to return from this digression, I have to observe, that it is really lamentable to see critics, of your calibre, finding fault with all authors for want of original matter. It would be very important to the medical world, were you to inform it, where we can find original matter. Most assuredly not in your Cyclopædia or Review, though you who aim at tomes, the offspring of other men's brains, condemn works by wholesale; in fact, you attack every thing unless the production of a friend, for want of originality. The laborious

and learned productions of Professor Cooper, Dr. Copland, Dr. Beck, as well as my own humble works, fall under the ban of your erudite critical censure. Pray what original work have you produced? If any, when did it appear, and where is it to be found? At any rate, I have never seen one scrap of original matter upon any medical or other subject from your leaden pens.

Ever since one of you published his Homer, that is to say, his translation of Lænnec's work, which by the way, a medical tyro of two years standing could as well accomplish, you have given no proficiency in medical literature, to say nothing of science, so far as I have observed, and I am not aware that the science or practice of medicine is indebted to either of you "par nobile fratrum," for one single fact in relation to its advancement.

How well qualified must you then be to decry mine or any other work, for its want of originality, while you yourselves, have evinced none!

Admitting for the sake of argument, what is not true, that there is not "a syllable of original matter in the work" (mine); in such case you and I are precisely in the same position. So much for your love of originality.

But permit me to inform you, that your assertion, is what our polite Gallican contemporaries would designate, cela n'est pas vrai.—Anglice—not true.

No sabe uno que pensar de vm.

One does not know what to think of you. You know, or you ought to have known, before you made the preceding remark—had you condescended to peruse my work—that more than one half of it is original matter;—a fact, which ill accords with your stricture—"there is not an original syllable in the work."—p. 460. Such is your remarkably impartial criticism.

You in common with too many medical writers of the day, attack compilers of works, as if every medical book was to be original. This illiberal and foolish observation was made on a former occasion, by a brother critic of yours' on my work on Medical Jurisprudence, whose *interest* it was to praise the learned and elaborate compilation of Professor Beck, as it was then published by his employers, against the new edition of mine, which was decl ed on that occasion, the worst book ever published by this honest reviewer, though lauded in America, which has much reason to be proud of Dr. Beck—where the reviewers declared it the best manual extant—not a systematic treatise—that it ought to be reprinted in that country, which was accordingly done, under the able editorship of Professor Griffiths.

Now hear the sentiment of a first rate moral philosopher, poet, and critic, of the Augustan age of classical literature in this country.

"Were all books reduced to their quintescence, many a bulky author would make his appearance in a penny paper: there would be scarcely any such thing in Nature as a folio: the works of an age would be contained on a few shelves; not to mention the millions of volumes that would be utterly annihilated."—*Addison.—Spectator, No.* 124. Your Cyclopædia and Journal excepted!

It would be well, were many modern medical critics to remember that a compiler is one deeply versed in all that has been written on his subject; not one of those pretended original authors, who is ignorant of the labours of his predecessors, and who sets forth his original opinions, which were really published centuries before he was born, as is too generally the case.

Lastly, you attack my article on Abortion in the Cyclopædia of Practical Surgery. I shall not now state your position with respect to that work; but I shall inform you that my article is not as you allege, copied, from my learned and able friend Dr. Copland, but was expressly written by myself, and afterwards sadly modified in the work, in which it appeared. Many of our cyclopædists are like the Swiss amanuenses already noticed; but I must beg to assure you, that the article such as it even now is, with all due deference to your obstetric opinion, is not below the present state of science, for it contains many practical hints, which I defy you to point out in any other work extant!

Allow me to observe, in conclusion, that when you condescend to review any of my unfortunate works in future, pray, for your own sakes, employ some persons, who know something of the subject matter. Vaya vm. con. Dios. hasta la vista—Good-bye, till we meet again.

I am, Gentlemen,

Your obedient Servant,

4. Charlotte Street, Bloomsbury, Bedford Square, December 12, 1838. M. RYAN, M.D.

To the Editors of the Medico-Chirurgical Review.

GENTLEMEN.—In your last Number, you have done me the honor to notice a Paper of mine on Prolapsus Uteri, read before the Medical Society of this State at its last session. You will pardon the liberty I take in calling your attention to a very strange error under which the writer of the notice appears to have penned his remarks. I am not the inventor of the apparatus called "Supporter" nor of any improvement therein, neither do I reside at 279, Regent-street, London! The apparatus was invented by the late A. G. HULL, M.D. of this city, seven or eight years since, and has not, so far as I am aware, undergone any modification since its introduction into practise in this country.

The Medical Society in which I read the Paper is a representative body, consisting of one medical man from each county in the State, elected by the medical society of such county to act as its delegate, and holding annual sessions, at the seat of government. This society is established by charter, and forms a part of our sanatory police. At its meetings the delegates read papers, which if approved by the society, are on motion referred to an editorial committee for publication in the "Transactions."

Being delegate from the County of New York, where the new apparatus was in extensive and successful use, and having applied it, in many instances successfully in my own practice, I wrote the Paper you found in the last Number of the Transactions, and were so kind as to notice, as a species of local intelligence from my constituents. The Paper is entitled (I quote from memory) "*Observations on Prolapsus of the Womb, with reference to the Modus Operandi of a New Apparatus, invented by the late Dr. Hull, called Utero-Abdominal Supporter,*" or words to this effect.

If you will take the trouble to look at your copy of the Transactions again and make a brief correction of the errors, you will very much oblige me.

I shall call to-morrow on the Messrs. Woods, to ascertain if they will consider themselves at liberty to correct the American edition, which is probably now in press.

Very respectfully, your obedient servant,

New York, Nov. 21, 1838. JOHN F. GRAY.

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☞ *This Part concludes the life of Dr. Baron, and exhibits portraits and biographies of Dr. Baillie, Dr. Bright, Sir B. Brodie. The first two are good likenesses; but that of Sir Benjamin Brodie, is much more like Mr. Babington than Sir Benjamin. We think it must have been done in a mistake.*

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4. Transactions of the Medical and Physical Society of Bombay. Vol. I. Bombay, American Mission Press. 1838. pp. 370. Richardson, Cornhill.

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6. Researches on Suppuration. By GEORGE GUILLVER, Esq. Assistant Surgeon to the Royal Regiment of Horse Guards.

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8. The Principles of Surgery. Vols. I. and II. containing the Doctrine and Practice relating to Inflammation and its various consequences, Tumours, Wounds, and the states connected with them,—the Surgical Anatomy of the Human Body, and its application to Injuries and Operations. By JOHN BURNS, M.D, F.R.S. Regius Professor of Surgery in the University of Glasgow. London, Longman and Co. October, 1838.

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*** *In Exchange.*

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☞ *In our next.*

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*** *The letter-press is ably executed in this Part, but we think the portrait of Dr. Clutterbuck, though a good engraving, is not a very striking likeness.*

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THE

Medico-Chirurgical Review,

No. LX.

[NO. 20 OF A DECENNIAL SERIES.]

JANUARY 1, TO APRIL 1, 1839.

ON DISEASES OF THE URINARY ORGANS.

I. URINARY DISEASES AND THEIR TREATMENT. By *Robert Willis*, M.D., Licentiate of the Royal College of Physicians, Physician to the Royal Infirmary for Children, &c. &c.

II. ON GRANULAR DEGENERATION OF THE KIDNIES AND ITS CONNEXION WITH DROPSY, INFLAMMATIONS, AND OTHER DISEASES. By *Robert Christison*, M.D. F.R.S.E. &c. &c. Octavo, pp. 288. Edinb. 1839.

III. TRAITE DES MALADIES DES REINS, ET DES ALTERATIONS DE LA SECRETION URINAIRE, ETUDIEES ELLE-MEMES, ET DANS LEURS RAPPORTS AVEC LES MALADIES DES URETERES, DE LA VESSIE, DE LA PROSTATE, DE L'URETHRE, &c. Avec un Atlas in folio. Par *P. Rayer*, Médecin de l'Hôpital de la Charité, &c. &c. Octavo. Tome Premier, pp. 638. Six Planches Gravèes. A Paris, chez J. B. Bailliere.

THE scope and object of the work of Dr. Willis must be, from our former notice of it, tolerably familiar to our readers.

The title of that of Dr. Christison explains its more limited design. It is solely occupied with the "granular degeneration" of the kidnies, and is intended to illustrate, to amplify, perhaps correct, the views of Dr. Bright. Its author's anticipations, as well as his confidence, may be judged from the following copious passage in his Preface:—

"The apathy with which the invaluable discoveries of *Dr. Bright* continue to be regarded by many is most unaccountable. It is only within the last two years that medical men in this city have generally admitted the accuracy of his researches. I still meet with respectable members of the profession who seem inclined to adhere to their scepticism. And in a late visit to London I found to my surprise that by some medical gentlemen of the metropolis the doctrines of *Dr. Bright* continue to be called in question. This is surely a very strange result of the numerous extended inquiries which have now been made, and all with one invariable result. I do not know a single investigation, of such extent as to deserve the name, which has contradicted in any material point the general principles first announced in 1827. And as to confirmatory researches,

I shall take the liberty of expressing my sentiments in the language of *Dr. Osborne*, who remarks, that 'the number of observations recorded' (as this be it observed so far back as 1834) 'must be admitted to have been greater than has within many years been brought to bear on any one individual proposition in medical science.'

Were an apology wanted then for the appearance of the present treatise, the preceding exposition might perhaps be considered not inadequate. But other reasons have also actuated me. The subject I have undertaken to elucidate has been more or less an express object of study with me ever since the publication of Dr. Bright's Reports in 1827. Some of the general facts which have thus been deduced have gone forth in an imperfect form through the medium of my lectures delivered from time to time in the Clinical Courses of this University during the last six years. Occasionally I perceive from the Journals, that others have been expending much pains in ascertaining points which have here been for some time determined; and that others call in question facts which have been long placed out of the reach of controversy. A few received doctrines, of much importance both to pathology and to practice, have appeared to me doubtful, if not inconsistent with facts, and therefore to deserve early revision. One interesting department, the pathological condition of the blood, has hitherto been barely touched upon, and that chiefly in points which were started in my paper in 1829. On farther investigation it has appeared to me, not only that the special facts formerly advanced in an isolated shape may be now stated with full confidence in more general terms, but likewise that the entire subject may be presented with new features of interest. Lastly, I had long thought that the students of this University and the profession at large stood in need of an easily accessible work on Granular Degeneration of the Kidnies. Nor has the publication of the excellent memoir of *Dr. Osborne* altered this opinion; since the ground we have taken up is somewhat different and the doctrines to which we have been conducted are not always in accord.

It is necessary to explain, that this treatise was framed in the first instance exclusively from the results of personal experience, based on the earliest work of *Dr. Bright*. Its substance indeed formed part of my Clinical Lectures delivered in 1831, as well as frequently since; and it was first written without reference to any researches published subsequently to those of *Dr. Gregory*, which made their appearance during the same year. Some valuable observations have since been added from the publications of later authors. But these authors may also recognize apparently some of their facts unacknowledged; for I did not think it necessary to refer to others what had long been previously known to myself, and repeatedly made public in the discharge of my professional duties." xiii.

It is clear that Dr. Christison's observations must be possessed of high importance, for, he himself assures us, that they have determined points on which others are labouring in vain—that they place beyond the reach of controversy much that is controverted—that they render it probable that a few received doctrines ought to be received no longer—and that they establish some general conclusions of no mean consequence in reference to the pathological condition of the blood. All very excellent things, and quite enough to apologise for the publication of a book.

M. Rayer explains, in a preface of some pages, the object of *his* labours. He admits, what is undeniable, that the diseases of the kidney, and, particularly, the alterations of the urine, have hitherto received little attention in France. There cannot indeed be a more pregnant instance of the absence of a practical turn in our neighbours, than their preference of morbid anatomy to pathology. In the latter we have commenced and carried on

investigations to which the continental physicians have been quite indifferent —while, in the former, we need not say how far they have outstripped us.

It would be idle to descant to the English reader on the value of the study of the alterations of the urine. It is necessary to awake the attention of his countrymen, and therefore M. Rayer may be excused for dwelling on it.

M. Rayer has studied and describes the alterations of the urine as they depend on excess or defect of some of its natural constituents—or as they result from the accidental presence of other organic principles, proceeding from the blood or from foreign matters accidentally introduced into the economy by absorption.

M. Rayer acknowledges the value of the ordinary tests employed to determine the condition of the urine. But he also calls attention to the employment of the microscope, and strongly insists on its utility. By its means, we promptly determine the nature of the deposits of the urine, or of substances suspended in it, and arrive at an acquaintance with organic matters, mucus, fragments of epithelium, small quantities of pus or blood, spermatic animalcules, substances or objects, which, without the microscope, present insurmountable difficulties to the inquirer.

The dominant idea of M. Rayer, that which has presided over his investigations, and tinges all his conclusions, is, that no diseases are absolutely local, but that all have a tendency to dissemination, and to implication of the system. We need scarcely observe that this opinion has long formed the basis of practice in England, at all events, since the publication of the work of Mr. Abernethy. Here then, as elsewhere, we may justly claim for our country and our countrymen that merit which is fairly due to them—the merit of being in advance of our continental brethren, in most that relates to the practical application of medicine.

We shall now return to the work of Dr. Willis. We left him on the brink of his fourth chapter, and we shall now enter on it. That chapter is intituled:—

I.—Morbid states in which the urine contains in solution or as precipitates certain principles which do not occur in the healthy secretion, but appear to be derived immediately from one or other of these.*

Dr. Willis remarks, that one of the many interesting discoveries of modern chemistry, is the convertibility of some proximate animal principles into one another—nay, the artificial formation of some from their ultimate elements. Urea, for example, is said to have been formed by Wœhler.

"If we set out," says Dr. W. "from this peculiar organic principle, the ultimate composition of which appears to be 46.65 nitrogen, 19.97 carbon, 6.65 hydrogen, and 26.65 oxygen, ($H^2 C^2 H^4 O^2$), and suppose the proportions of nitrogen and hydrogen to be lessened, whilst those of carbon and oxygen are increased, we shall have lithic or uric acid produced,—33.37 nitrogen, 36.00

* It is difficult to understand the construction of this sentence.

carbon, 2,36 hydrogen, 28,27, oxygen ($N^4 C^5 H^4 O^3$.) Again, if we suppose the nitrogen, carbon, and hydrogen, to remain as in lithic acid, but the quantity of oxygen to be diminished to the extent of one atom, we shall have the lithic or uric oxide (xanthic oxide Marcet,) produced—($N^4 C^5 H^4 O^2$). Farther, if the nitrogen and carbon fall short, whilst the hydrogen and oxygen increase in relative quantity, we have another element of morbid urine formed, namely, cystine, (cystic oxide, Wollaston,) as appears by the composition of this substance, 11.85 nitrogen, 29.88 carbon, 5.12 hydrogen, 53.15 oxygen, ($N C^3 H^6 O^4$). Another very remarkable quaternary compound, occasionally met with in morbid urine, is carbonate of ammonia, for the presence of which we should, without the lights afforded us by chemistry, be greatly at a loss to account. But when we know that the elementary composition of urea is identical with that of the cyanate of ammonia; that if one atom of this substance and one atom of water come to decompose each other, which readily happens, and that the product is exactly one atom of *carbonate of ammonia*, we have no difficulty whatever in explaining the occurrence in the urine of the volatile alkali combined with carbonic acid.

Occasionally, again, two of the elements of urea part company, as it were, with the other two, and enter into certain binary combinations that are also now and then detected in the urine, either alone, or accidentally conjoined with bases which they have encountered in the fluid. Thus the nitrogen and carbon uniting and separating themselves from the hydrogen and oxygen, give rise to *cyanogen* or bicarburet of nitrogen; and it is no less remarkable than indisputable that compounds of the cyanic acid, other than the cyanate of ammonia already mentioned, such as the *ferro-cyanate of potash* and even *hydrocyanic acid* in a free state, are sometimes met with in the urine. It farther happens not uncommonly, especially in certain febrile states of the system, that the nitrogen and oxygen select each other peculiarly, leaving out of the question the carbon and hydrogen, and form *nitric acid*, which, acting on the lithic acid, is the source of the compounds that have been described under the titles of the erythric and purpuric acids. Finally, if the nitrogen and hydrogen part company with the carbon and oxygen, and leave these last to unite very nearly in the proportions in which the former occurs in lithic acid, the latter in cystine, we have *oxalic acid* produced,—39.99 carbon, 53.33 oxygen,—an occasional and very formidable constituent of the urine in certain morbid states.

Under other circumstances, the kidney seems to fall short of the acidifying property it possesses as part of its distinguishing function, and then the radicals of the acids which the urine contains present themselves in an uncombined state. It is in this way, probably, that phosphorus now and then appears in solution in the urine, so that the fluid is seen to be luminous when emitted in the dark.

It is even possible that the albumen which often shows itself as a constituent of the urine, in a form of kidney disease that has lately attracted much attention, may be derived from the urea. Making urea the standard of comparison as before, if the relative proportion of nitrogen be considerably lessened, whilst the portions of hydrogen and especially of carbon are much increased, we have the elements of albumen, 15.56 nitrogen, 49.75 carbon, 8.77 hydrogen, 26.78 oxygen. In other cases the albuminous principle contained in the urine is unquestionably derived immediately from the blood, as is proved by the passage along with it of the fibrine red particles and other constituents of this vital fluid." 107.

The extract is long, but the facts which it expresses are exceedingly important, and no less important than clearly stated.

The chapter before us contains twelve sections. The first is on the—

Discharge of Urine, which contains the Lithic Oxyde—Lithoxiduria.

Our readers must be aware that Dr. Marcet described a calculus under the name of xanthic oxyde. Berzelius suspected that it was no other than uric acid, accidentally modified. But Langenbeck has lately extracted a stone which, after a very careful analysis by Liebig and Woehler, has proved to be the xanthic oxyde. Its constitution was the same as that of lithic acid *minus one atom of oxygen*; these two substances were in fact two oxydes of the same radical, the formula of lithic acid being C^5 N^4 H^4 O^3, that of the xanthic oxyde, which they of course designate with the greatest propriety lithic or uric oxyde, C^5 N^4 H^4 O^2.

It has not been recognized either in solution or as a deposit from the urine. Dr. Willis remarks that the lithic oxyde may be expected to occur, associated with deposites of the lithic acid. We have, in fact, but to suppose the kidney to fall somewhat short of its acidifying powers, to have the lithic oxide instead of the lithic acid (the *oxide* instead of the *acid* of urea) produced.

Section 2.—*Of the discharge of Urine which contains Cystine (cystic oxide) in solution or as a deposite*—Cystinuria.

This, which occasionally forms calculi, has been several times discovered in urine, both in a state of solution and mechanical suspension. Dr. Prout and Dr. Venables have both described cases in which they detected it. In both calculi existed. Dr. Willis has lately found it in a case in which none could be suspected. His attention was arrested by the greenish-yellow colour of the urine, its peculiar smell, and its somewhat oily appearance when passed. It reddened litmus paper very slightly, if at all; was of sp. gravity 1.030; did not coagulate by heat or nitric acid, and by standing became opalescent after thirty-six hours from the presence of a fine pulverulent matter, part of which was deposited. Acetate acid threw down a pretty copious brown precipitate, which, collected on a filter, was found to possess all the properties of cystine. This urine held a considerable quantity of the phosphatic salts in solution, which seems common; it showed no traces of lithic acid; but Dr. W. could not discover that it was deficient in urea, though, in the previously described cases, it has been so.

The best re-agents for discovering cystine in combination with alkalis are the acetic, citric, or tartaric acid; in each of which it is insoluble. The bicarbonate of ammonia immediately throws it down from its soluble combinations with potash and soda.

M Rayer observes that the calculi formed of cystic oxyde are agglomerations of confused, semi-transparent, yellowish, and insipid crystals. The precipitate of cystine consists of hexagonal, colourless, and transparent laminæ, visible in the microscope, when its solution in potass is treated with acetic acid, or, when dissolved in ammonia, whence the crystals spontaneously separate by evaporation.

Section 3.—*Of the discharge of Urine, which contains the Purpuric acid, and its Salts*—Porphyruria.

The red colour of the sediments of febrile urine, aud the pink hue of the sediment of hectic and dyspeptic urine have been ascribed by Dr. Prout to

the presence of a purpurate, either of ammonia or of soda. But Berzelius concluded that the red and pink colours of urinary sediments were not caused by the intermixture of a purpurate of any base, but by the presence either of the ordinary colouring matter of the urine, or of a peculiar animal matter, which dyed the deposites in the manner of lakes. The point is not yet settled, for, as Dr. Willis observes, organic chemistry forms the low-countries of the science, the field of all the disputes that are going.

The depth of tint of the sediment would seem to depend on the quantum of the adventitious colouring principle. Sometimes the tint exists with little sediment.

"The dusky red or lateritious sediment, which recent observations have shown generally to consist of lithic acid combined with an animal colouring matter, is the well-known herald of the abatement of febrile and inflammatory action in the system, and is always looked for anxiously in cases of danger by the attentive pathologist. The depth of tint of the sediment let fall under such circumstances, has ever been observed to afford a kind of criterion of the intensity of the symptoms, the deep dusky red sediment showing itself during and especially on the abatement of high inflammatory fever in vigorous subjects; the paler coloured and fine pink precipitates being associated with action of a less energetic kind, with the low fever of local organic disease, or hectic as it is called.

A purpuric state of the urine (without regard to the nature of the colouring principle) in a less marked degree appears to be almost habitual to certain individuals of excitable and delicate constitution, among whom slight errors of diet, exposure to cold, and even an ungenial state of the atmosphere, though no chill has been suffered, are observed to produce it. Probably the purest specimens of the bright pink sediment that are ever met with, are deposited from the urine of some dropsical subjects, and of those who are labouring under chronic visceral affections especially of the liver. There seems no reason, however, to conclude that visceral diseases are present as the causes of these pink sediments in every instance in which they occur; on the contrary, they are frequently observed accidentally in cases where there is no room even to suspect the existence of organic disease, in which none certainly exists.

Occurring occasionally and in conjunction with obvious causes of general excitement, or of particular local derangement, a purpuric state of the urinary secretion is to be regarded as of just as much but not of more importance than accidental lithic states of this product. When it presents itself in a high degree, however, and habitually for any length of time, there are just grounds of alarm; a deranged condition of the general functions, depending in all probability on some latent organic mischief of a local nature, that may ultimately bring the patient's life into jeopardy, being indicated." 114.

There need not be said much on the subject of treatment. When an attendant on febrile excitement the remedies for the latter are usually the remedies for it. When the general features are those of the lithic diathesis, the latter becomes the subject of treatment. In short, the object is to determine the cause, organic or functional, of the affection, and to act accordingly. Pink coloured lithic deposites certainly should not be neglected. They have formed, in two instances, the nucleus of a stone.

SECTION 4.—*Of the discharge of Urine which contains a Salt of the Oxalic acid,*—OXALURIA.

Dr. Willis commences this Section by observing:—

"Lithic acid under the prolonged action of nitric acid and of chlorine, is partly

converted into oxalic acid. Liebig and Woehler found that when lithic acid was boiled with the superoxide of lead it was resolved into urea, alantoin, carbonic acid and oxalic acid. I have besides shown in the general remarks introductory to the different sections of the present chapter, that the proportion of carbon which exists in lithic acid, united to the proportion of oxygen which occurs in cystine, form as nearly as may be the combining quantities of the elements of oxalic acid. I do not, therefore, find any peculiar difficulty in accounting for the occasional existence of oxalic acid as a product of the renal secretion. It does not seem necessary to suppose that this substance should be introduced among the ingesta: its elements exist in urine, and the chemic art of the kidney may, and undoubtedly does, suffice at times to combine them into the compound in question. Nevertheless it remains true that certain articles of food, which are pretty generally used in some countries, contain oxalic acid; and the experiments of Woehler have put it beyond doubt that it is one of the few acids that make their way into the torrent of the circulation, and are then eliminated both free and combined with a base from the system by the kidney. The urine contained in the bladder of a dog, killed eight hours after having had two drams of oxalic acid mixed with a quantity of meat and bread given to it, was found to deposite a precipitate on cooling, which bore an exact resemblance to that formed by the triple phosphate. The clear urine mixed with a little of a solution of nitrate of lime gave a father deposite, having the same external characters. On examination both of the deposites were found to consist of oxalate of lime. The articles of food used by man which contain oxalic acid in largest quantity are the sorrel, (Rumex acetossa), so much eaten by all classes in France, and consumed to some extent by the upper ranks in England as an agreeable vegetable; the tomata, (Solanum lycopersicum), of which many individuals are passionately fond; and the leaf-stalk of the rhubarb plant, (Rheum palmatum,) which in the spring and early summer months is consumed in large quantities made into pies and puddings by the community at large in England." 118.

M. Rayer appears to doubt the influence of sorrel in producing oxalate deposits. Yet evidence seems in favour of the supposition. The oxalate of lime has not often been observed as a precipitate from the urine. But Mr. Henry Brett has lately published an interesting case of it. Dr. Willis thinks that when the urine is more carefully and more scientifically examined, deposites of the oxalate will be found not to be rare. It probably, however, occurs most frequently as an ingredient in amorphous urinary sediments. It has been detected in company with the amorphous lithic acid sediment—and has been confounded with the lithate of lime.

The oxalate diathesis is probably intimately connected with the lithic. On this hint the treatment is founded, for the same general plan must be pursued as is required for the latter. Those who labour under it should, of course, give up those vegetables which contain oxalic acid.

5. The next Section is appropriated to the discharge of urine, which contains albumen (as a derivative from urea?) We shall defer what our author says of albuminous urine, until we take that up.

Section 6.—*Of the discharge of Urine which contains the Elements of Urea in the shape of Carbonate of Ammonia.*

The elements of one atom of urea, combining with those of one atom of water, constitute one atom of carbonate of ammonia, a combination which

implies decomposition both of urea and water, and occurs very readily in high temperatures.

This change, the common consequences of decomposition without, may occur in the kidney itself, from which it is directly eliminated by an altered mode of secretion. Dr. Graves was the first who demonstrated this fact. He had related two instances. The first was that of a patient labouring under bad continued fever with petechiæ. The urine abstracted from the bladder, which showed no signs of disease, within two hours after it had been completely emptied, was found strongly ammoniacal. The second case was that of a powerful labourer, who fell dangerously ill of fever and anasarca, from having worked up to his knees in water during cold weather. The urine here was of a pale straw colour, and deposited the phosphatic salts on standing; it smelt strongly of ammonia, and effervesced briskly on the addition of an acid, when a sample of it, obtained from the bladder within so short a time as half an hour after this viscus had been completely emptied, was examined. This patient died. The bladder was found perfectly healthy. The kidneys were enlarged, and turgid with blood. The liver was much diseased. The urine was without a trace of urea. In a case of ascites, quoted by Nysten, the urine contained much carbonate of ammonia, but no urea; and, in two cases which were under treatment for the honey diabetes in the Royal Infirmary of Glasgow, by means of animal food and opium, the urine which had been highly ureous, became suddenly alkaline, and was found to contain a large quantity of ammonia, but no urea. In these cases he combines the elements of urea so as to constitute the carbonate of ammonia.

Dr. Willis goes on to remark, that in certain irritable states of the system, when the urine is secreted copiously, and with a disposition to throw down the phosphatic salts, circumstances in which the fluid is often neutral or acid only in the very slightest degree, any additional irritation, such as that produced by the introduction of a bougie or catheter into the urethra, will often suffice to turn it positively alkaline.

The state of the urine in tyhoid fever, with regard especially to its acid or alkaline reaction, is often advantageously consulted as an index of the progress of the disease. In the earlier stages the urine is acid, and as the disease advances it becomes neutral, and then alkaline; as the disease declines, on the contrary, the urine from alkaline becomes neutral and then acid. The return to the acid state is always a favourable sign, and may sometimes enable us to give a flattering prognosis when there is nothing else in the state of the patient that betokens improvement.

We need hardly observe that ammoniacal urine can only be remedied through the system at large. To treat it is to treat the constitutional state of which it is a consequence and index But it is important to be aware, that the urine may be secreted ammoniacal, for when this condition is observed it is usually attributed to putrefactive fermentation of the fluid in the bladder.

In certain chronic diseases of that organ we have indeed ammoniacal urine of the most offensive description evacuated. There, the ammonia seems really due to rapid decomposition of the urine effected by the putrefactive ferment of a diseased vesical mucus. In many of these cases if the bladder be carefully washed out as a preliminary, urine may be withdrawn by a clean

catheter, that will show acid reaction. But this latter circumstance is decisive of the fact that the urine in this case was not secreted ammoniacal, a characteristic and diagnostic feature. Healthy acid urine, continues Dr. Willis, uninoculated by such a ferment, is a fluid that is by no means greatly disposed to run into putrefaction; we often see it withdrawn in cases of retention, after having been pent up in the bladder for two or three days, perfectly unchanged; and I have kept the highly acid urine of a patient labouring under calculus of the kidney in an open vessel for more than a fortnight, in a temperature varying between 50° and 65° F. without its undergoing any change. The ammoniacal urine which is the product of a new combination among the elements of urea at the moment of its formation, is not particularly and otherwise offensive—it has the smell of ammonia superadded to its own urinous odour. That which results from putrefactive decomposition is fetid and disgusting in the last degree.

Section 7.—*Of the discharge of Urine containing the Hydrocyanic and Ferrocyanic Acids.*

"It has happened in more than one instance in which a salt of iron had either been taken in the way of medicine or accidentally, that the urine voided has presented a blue colour, from containing the compound of ferrocyanic acid and iron which is commonly called prussian blue. Thus Dr. William Batt of Genoa, observed in a girl who had been taking six grains of the æthiops martialis or black oxide of iron daily for a few weeks, on account of some stomach complaints, that the urine evacuated was of a blue colour. The fluid collected and set aside deposited upon the bottom and sides of the recipient a quantity of sediment of a beautiful blue colour. This sediment analysed by Professor Mojon was found to consist of the prussiate of iron. M. Julia Fontanelle has given the histories of two cases in which urine was discharged having a blue colour. The first occurred in the person of an old man aged 82, who, on the second day of an illness caused by an acute affection of the urinary passages, began to pass urine which was thick and ropy, and of a deep blue colour. The ropiness was owing to the presence of a plentiful admixture of albumen or gelatine, the colour to that of the hydrocyanate of iron combined probably with soda. This patient had taken no preparation of iron. But as oxide of iron has been shewn to be a constant constituent of urinary sediments deposited during febrile states of the system, its presence in the colouring compound is readily accounted for. The second case happened in a lad of 15 who was suffering from violent colic, in consequence of having swallowed a quantity of ink by mistake. The urine when first voided was of a greenish blue colour, which after the lapse of an hour deepened into a rich blue. The tint became still more intense (probably from an additional quantity of precipitate being thrown down) when a few drops of the persulphate of iron were added to the urine. The sediment of the urine was found to have all the properties of prussian blue." 130.

Dr. Willis quotes some other cases to which we need not advert. The urine is generally stated in these cases to have been thick and ropy, and to have contained albumen or gelatine. In one case it contained sugar. In another it shewed traces of urea.

The presence of cyanic acid was only discovered in these cases from its having accidentally met with iron and given rise to a blue colour.

"There is every reason to believe that the cyanic or hydrocyanic acid may often exist in urine, and pass unsuspected. One instance indeed and only one so far as I am aware is recorded, in which prussic acid, free and uncombined, as

I read the various reports of the case, has been detected in the urine. This instance occurred to the distinguished Italian chemist Brugnatelli.* The patient who was the subject of the observation, was affected with dropsy, (an *ascites*, I believe, from disease of the liver,) and the urine contained almost no urea. In M. Cantin's case, free hydrocyanic acid was also ascertained to be present, along with the compound of this acid and iron.

There can be little doubt but that the urine, were it properly examined, would be found to contain prussic acid in a variety of morbid conditions of the general system. Hydrocyanic acid is a product of the destructive distillation of animal matters generally, of blood and lithic acid in particular; and we know enough of the chemic powers of the kidney to warrant our admitting its ability upon occasion to separate the elements of the hydrated cyanate of ammonia, or urea, combined as cyanic acid and water, just as they are occasionally eliminated in the shape of bicarbonate of ammonia.

I am not aware that the presence of hydrocyanic acid or of the prussiate of iron in the urine has been attended with any peculiar consequences. Dr. Batt's patient did well. So did both the cases seen by M. Julia. The urine in the cases generally, however, seems to have presented other evidence of being in a morbid state, and in some of them at least, was undoubtedly connected with constitutional derangement, probably with organic lesion, that would have received the most careful consideration from an enlightened pathologist. The albuminous, or as they are sometimes improperly styled, gelatinous states of the urine, point to the existence, in some cases, of inflammatory action in the system, a circumstance which is also farther proclaimed by the plentiful traces of iron encountered, a substance only met with in quantity in the lateritious sediments of inflammatory and febrile urine. These considerations taken in conjunction with every other circumstance would influence, and probably to a certain extent guide, our mode of treating such cases." 133.

SECTION 8.—*Of the discharge of Urine containing Carbonate of Lime in Solution or as a Deposite.*

The carbonate of lime, though it forms an occasional constituent of urinary calculi, has not, to Dr. Willis's knowledge, been observed, either as a solution or a deposit in human urine. Yet he does not doubt that it occasionally exists, though held in solution by an excess of carbonic acid, which also aids in keeping the phosphatic salts dissolved, or disguised from intimate admixture with these and other precipitates, it must always be detected with difficulty.

SECTION 9.—*Of the discharge of Urine which is luminous or phosphorescent.* —PHOSPHORURIA.

The acidifying influence of the kidney on the elements or bases presented to it, may sometimes be imperfectly exerted. The phosphorus in the urine may be in this predicament. Dr. Willis states that there are actually several instances on record, in which the urine has been voided directly from the bladder, either generally luminous, or having luminous points intermingled with it. Thus: Dr. Jurine, then in his usual health, whilst making water one dark night in a corner, observed that his urine bore numerous shining

* "I have searched in vain for a reference to the original record of the case by Brugnatelli. Almost the only place I have not looked into in the hopes of finding its history, is the Journal edited by him, I think at Pisa, in 4 vols. 8vo. 1791-2."

points along with it in its current. The boards down which it flowed, and the leaves upon which it fell, also glimmered with many luminous particles or spots the size of a small lentil. The light continued for about thirty seconds and then disappeared. To make sure that the luminous points he observed were voided with his urine, the Doctor passed a little of it into the palm of his hand, and in this he observed several of them floating about. He closed his hand and hurried home to examine the small quantity of fluid he could carry in this way; but even with the assistance of a magnifier he could discover nothing. Doctor Jurine was living in his usual temperate way when this happened, and though he was on the watch for a recurrence of such a phenomenon, he did not perceive his urine to become phosphorescent for a long time. At the interval of a year, however, the same thing happened again.

Dr. Willis cites, in addition to the preceding, the cases of Dr. Guyton, of Autum—of M. Pictet, of Geneva—of Dr. S. Reisel—and of Dr. L. Pettenkover, all of whom made water very luminously. These enlightened individuals were all men of science, yet Dr. Pettenkover diffidently owns to a tender sentiment towards beer. Dr. Willis asks whether, in those jolly people, who now and then expire of spontaneous combustion, the phosphorus of the body is properly eliminated by the kidney!

Section 10. *Of the discharge of Urine of various abnormal and remarkable colours.*

The nature of the ordinary colouring matter of the urine is still imperfectly known. Nor is it determined whether the abnormal tints of the urine results from modifications of the colouring matter in question.

"When the colour of abnormally tinted urine depends on the presence of an alkaline purpurate, for a cyanate or phosphate of iron, we conceive the colouring matters developed at the expense, or in consequence of the decomposition, of one or other of the ordinary ingredients of the urine. But instances of red, blue, green, and black urine have occasionally been observed, the peculiar colour of which could not be referred to the existence of any purpurate, or any combination of iron with the cyanic or phosphoric acid. Of this description appear to have been the varieties of urine observed by many of the ancient physicians, and particularly described by Actuarius, who flourished towards the end of the thirteenth century, in his work 'De Urinis,' under the titles of *Urinæ venetæ, lividæ et nigræ.* The kind of urine characterized as *Urina veneta*, appears to have been of a slate-gray colour, for the tint designated by the epithet he informs us may be imitated by mixing equal parts of ink and white lead together. The word *ventus* was afterwards used however to signify a deep blue." 139.

The recent researches, continues Dr. Willis, of Marcet, Prout, and Braconnot have, however, placed it beyond doubt that some deep brown or black, and blue coloured urines owe their peculiar tint to the presence of a new proximate principle, which with reference to a dark brown or black urine was spoken of under the title of *Melanic acid* by Dr. Prout, and by Braconnot under that of *Melanourine.* In giving the chemical history of a blue urine, the last-mentioned distinguished chemist speaks of the colouring matter under the name of *Cyanourine.*

Cases of black urine are rare. Dr. Marcet has left an account of two. The first was that, of a young female subject to febrile and hysterical attacks,

during which the urine assumed a deep purplish brown or black colour. The second case was that of a child seventeen months old, whose urine from the time of his birth had been observed to stain his napkins of a dark purple colour. At nine months of age, the urine was occasionally observed when first discharged to be clear and almost colourless, but gradually to acquire a dark colour like that of port wine, which deepened continually by standing until it became black. At the age of seventeen months, the child was robust and lively. The urine was carefully examined. In one specimen, the deep colour seemed to be due to the action of ammonia, spontaneously evolved, upon a peculiar principle of matter held in solution by the urine. Dr. Prout regarded this as of the nature of an acid, and accordingly named it *melanic acid*. He found it to bear a closer analogy to lithic acid, or to some of its products engendered by the action of nitric acid, than to any other principle contained in the urine. The specimen of urine remained without further change for a period of seven years, not even depositing any sediment in all that time. A second specimen became alkaline and putrid. A third, colourless at first, became ammoniacal, and acquired a pale claret colour.

" In his account of the chemical examination of some specimens of blue and black urine, M. Braconnot speaks of the colouring principles under the titles of Cyanourine and Melanourine. But, instead of regarding them as of the nature of acids, with Dr. Prout, he found these new proximate principles to have the property of bases, to combine with acids as the weaker alkalis do, and to form compounds, which as subsalts were of a brown, and as supersalts of a brilliant carmine colour. Berzelius remarks, that the melanic acid of Prout is very analogous to the black pulverulent substance, insoluble in alcohol, which is developed when the extractiform constituents of urine are submitted to the action of concentrated acids. The substances named melanic acid and melanourine seem also to bear a strong resemblance to those produced by the action or the dydrochloric acid on fibrine and albumen. If pure fibrine be acted on in this way, the colour of the solution is a rich blue; if it has not been quite pure the tint is of a greenish black, or black " 145.

Dr. Willis refers to two other cases of black urine. In the first, the sweat was black too. In the second, the discoloration of the urine disappeared during the exhibition of the decoction of uva ursi and carbonate of soda.

SECTION 11. *Of the discharge of Urine of various peculiar and abnormal odours.*

Several substances, medicinal and dietetic, are well known to impart an odour to the urine—turpentine that of violets—asparagus a disgusting one. Dr. Willis has observed, that the urine of those who have weak digestive powers very constantly partakes in a greater or less degree of the odour of the higher flavoured articles of food they consume. The odour of boiled beef, of stewed celery, of ale and beer, &c. &c., may always be detected in the urine of such individuals.

The smell of the urine, he continues, is also affected to various extents in the course of different diseases. It has sometimes been remarked of a musky odour; occasionally it has the peculiar smell of mice, which seems to pervade the whole body in certain cases of typhoid fever. In other cases it is simply fetid and sickly. He has in particular very frequently observed the urine

to have a most offensive odour in children who were labouring under affections of the digestive apparatus.

Dr. Willis promises to pursue the investigation of this part of the subject, and anticipates something from it.

Section 12.—*Of the discharge of Urine which contains Silica in solution, or as a deposit.*

Silica, a sparing ingredient in urine, has been detected in a few urinary calculi. Given to animals, in combination with potash, it finds its way out of the system by the kidney.

"Masses of siliceous matter, said to have been passed from the urinary bladder, are very frequently sent or brought to medical men and chemists for analysis. There are few collections of calculi in which a box of *siliceous gravel* will not be found. In that of the Royal College of Surgeons in London, for example, I observe one. Dr. Venables believed that he had seen siliceous matter voided by the urine in two instances. In the one, the concretion was of some size, and bore considerable resemblance to a tooth, to which it was likened by Dr. Prout when it was shown to him. In the other, the siliceous matter was like river or sea-sand. Medical practitioners have repeatedly had considerable masses of various mineral substances presented to them as urinary calculi, which they have often been able to pronounce at a glance to be ordinary rolled pebbles of the surrounding country. A friend informed me lately, that within a few weeks he had had, I think, three samples of siliceous *urinary gravel* transmitted to him for examination, which in each case consisted of pieces of quartz; and I know that both Dr. Bostock and Dr. Christison have oftener than once been requested to ascertain the chemical composition of certain masses of quartz and flint which were said to have been voided from the bladder.

There is every reason to believe that Dr. Venables was imposed upon by his patient, as, in the other instances quoted, imposition was attempted. It has often been remarked, that the so-called *siliceous gravel* is always of a description in relation within the geological structure of the district in which it is said to have been discharged. Some of the specimens have even had portions of other minerals, with which quartz is known to occur associated, adhering to them. This was the case with at least one of the specimens sent for Dr. Bostock's examination. Patients, and especially female patients, often show a singular taste for having diseases unlike all the rest of the world; and most of the instances in which these siliceous concretions were said to have been voided, occurred in females." 147.

We now arrive at a new chapter and a highly important subject—that of albuminous urine. We have hitherto almost confined ourselves to Dr. Willis. We shall now turn to Rayer and to Christison, particularly to the latter. The chapter of Dr. Willis' before us is intituled:—

MORBID STATES IN WHICH CERTAIN MATTERS BEING CONSTITUENTS OF THE BLOOD ARE CONTAINED IN THE URINE.

Dr. Willis starts with the remarks:—

"When we observe the rapidity with which fluids in general, and many saline, odorous, and colouring matters taken into the stomach are rendered by the kidneys, when we consider the great vascularity of these organs, and the freedom of communication that must exist between the arterial exhalents and the uriniferous tubules, we are almost prepared to expect that the blood, escaping

from its proper channels, will occasionally make its appearance in the urine. And accordingly we find that under a variety of circumstances, some of which can scarcely be regarded as of a proper pathological nature, one or other of the elements of the blood,—the albumen, the oil, the fibrine and the red globules show themselves either severally or associated, mingled with the product of the renal function.

Chemists are now generally agreed in considering the proximate organic principles named *albumen*, *fibrine*, and *caseine*, as mere modifications of one and the same element, which is conveniently and with great propriety indicated under the common epithet of albuminous. The urine, if the reports of highly respectable authorities are to be taken, occurs impregnated with the albuminous principle in each of the states constituting the three modifications that have been mentioned. But the existence of caseine as a constituent of the urine under any circumstances, has lately been called in question by M. Rayer, who has shown that the evidence upon which its presence was admitted is defective." 150.

He divides the chapter into three sections, in the first of which he examines urine which has the albumen of the blood mixed with it—in the second, he treats of urine having the oily and albumino-fibrinous elements of the blood mingled with it—and in the third, he considers urine which has all the elements of the blood mingled with it.

Dr. Christison will soon be found to connect albuminous urine very closely with granular degeneration of the kidneys. His work is made up of six sections, followed by a series of illustrative cases.

His first section is devoted to the pathology and morbid appearances of granular degeneration—his second to its symptoms and history—his third, to the secondary diseases connected with granular degeneration of the kidneys—the fourth, to the causes of granular degeneration—the fifth, to prognosis—the sixth, to treatment.

We shall first present an account of the more general remarks of Dr. Willis, and of M. Rayer, then pass to the more special ones of Dr. Christison.

SECTION 1.—*Of the Discharge of Urine, having the Albumen of the Blood mingled with it*—SERO-ALBUMINOUS URINE.

Very slight causes, observes Dr. Willis, especially such as interfere with the due performance of the process of digestion, have frequently the effect of rendering the urine even of a person in perfect health slightly turbid. In higher degrees of disturbance of the digestive function, and indeed under many circumstances not adequately understood, the urine is secreted opalescent and possessed of the appearance of whey.

"The milkiness in such cases has been ascribed to the presence of albumen. Dr. Bostock even came to the conclusion that albumen may at times be detected by appropriate tests in the urine of the great majority of individuals, apparently in perfect health. In his own person he had observed the quantity to be considerably increased by very trifling causes. I have in very many instances observed the urine secreted under the circumstances indicated, to be opalescent or milky: indeed, there are probably few men alive, who, when they have been compelled to exert themselves immediately after a full or hurried meal, have not noticed their urine to become turbid, and as if mixed with a little chalk or milk. I have not, however, found that the cause of the milkiness or want of transparency in these cases, was due to the presence of albumen. There may, it is true, have been rather more than the average quantity of vesical mucus diffused

through the urine, but the microscope showed that the opacity depended upon the suspension of an amorphous precipitate, which the proper reagents afterwards proved to consist of the ordinary earthy salts of the urine. Albumen, indeed, is by itself incompetent to cause milkiness such as is observed in these cases; a solution of simple albumen in water, or water impregnated with the saline constituents of the urine, is transparent. By the application of heat or the addition of a drop of nitric acid, such a solution immediately becomes turbid. The turbid urine in question, exposed to heat becomes opaque in an increased degree; but the addition of a drop of nitric acid, either before or after it is boiled, gives it complete transparency. This subject has been already touched upon in the section on Earthy Urine (Ceramuria). The proper inference from this diversity of experience is, that albumen is not always the cause of the milky or turbid urine rendered under the circumstances specified, by individuals otherwise in good health." 152.

M. Rayer directs attention, with some degree of earnestness, to the same fact—a fact which is, perhaps, occasionally lost sight of by hasty practitioners. M. Rayer's remarks, indeed, deserve a little further consideration.

If, he says, albuminous urine which is discharged *alkaline*, or soon afterwards becomes so, is exposed to the action of heat, it is not in general coagulated, sometimes indeed, if previously transparent, it exhibits no turbidity. If the quantity of albumen is considerable, it assumes a milky tint. If a few drops of nitric acid are added, the albumen is immediately coagulated and precipitated, while the superabundant urine is transparent and of a reddish colour, from the action of the acid on the colouring matter or on the uric acid. If the addition of nitric acid be extremely small the albumen will probably not be coagulated,but if the quantity of acid is increased the desired effect ensues.

From several experiments made by M. Guibourt and M. Rayer for the purpose of determining the cause of this phenomenon, the latter concludes that, nitric acid, in minute quantities, acetic acid, and phosphoric acid prevent coagulation of albumen by ebullition, but not precipitation by a further quantity of nitric acid. As urine might contain both albumen and a little free phosphoric acid, it follows that nitric acid is a better test than ebullition. It is better, however, to combine the two, and to examine the coagulated or precipitated matters in the microscope besides.

M. Rayer, as we have already stated, insists on the fact that alkaline urine may become turbid on the application of heat in consequence of the precipitation of the phosphates; the addition of nitric acid renders the urine clear. If nitric acid be added to it prior to the ebullition, turbidity is equally prevented. M. Rayer has often seen men of high general attainments commit the mistake of supposing that such urine was albuminous, in consequence of the effect of heat upon it.

We return to Dr. Willis. He goes on to remark that the most simple and common form of albuminous urine is that which is met with in dropsical affections, especially in anasarca.

In this class of cases, he continues, the albuminous principle is mingled with the urine in the state in which it occurs in the serum of the blood and the white of the bird's egg; and would escape observation but for the power possessed by heat and certain chemical reagents of causing its coagulation and precipitation in a solid form. In its sensible properties albuminous urine varies greatly, and does not always differ essentially from the healthy

fluid. Sometimes, perhaps most generally, it is paler in colour, secreted in larger quantity, and froths more when passed in a full stream into the utensil than usual. In such cases the specific gravity of the urine is uniformly low. In other cases, however, in which the urine is albuminous, the quantity elaborated is below rather than above the proper standard, and the fluid is high coloured, and of great density. This happens in the course of different acute inflammatory diseases. It is worthy of remark, that in some of the forms of disease in which the urine finally becomes copious and of inferior density, it is in the first instance scanty, and of higher specific gravity than wont. The anasarca that succeeds scarlet fever is very commonly accompanied in its invasion by dense, high coloured, and scanty urine. Brought to the temperature of 120°, albuminous urine begins to grow turbid, and as the temperature rises, to deposit coagulated albumen in clouds or flakes, which subside to the bottom. The amount of abnormal impregnation detected in this manner varies extremely; in some cases it is so trifling as to be barely perceptible, in others it is so great, that nearly the whole portion of urine submitted to experiment runs together into one solid mass, as the serum of the blood would do. Nitric acid dropped into this urine also causes a precipitate, which is abundant in proportion to the quantity of albumen it contains.

In the pale-coloured albuminous urine of low specific gravity there is always a deficiency of urea; and it is interesting and important to know that this deficiency is uniformly in proportion to the abundance of the albumen, a fact which plainly points to a connexion between the two proximate organic principles, and shows the morbid state proclaimed by the disappearance of the one and the appearance of the other, to be of the nature of that which he has described under the head of ureo-albuminous urine. But, in the deep-coloured albuminous urine of average or high specific gravity, the urea is not necessarily deficient in quantity. Dr. Willis has detected it by actual experiment, at the least, in the proportion in which it exists in health, in a variety of cases—in an instance of suppuration of the kidney, probably induced by the presence of a calculus in its pelvis; in a case in which the disease had been hæmaturia, but the urine at the time the examination was made, although highly albuminous, contained no red globules in anasarca after scarlatina, &c.

M. Rayer directs attention to the necessity of examining both the albuminous precipitate *and* the urine from which it has been separated, in order to appreciate the existence and the amount of urea. That principle exists in both, although some have overlooked it in one, and many in the other.

The turbid portion of albuminous urine, if examined in the microscope, exhibits lamellæ of membranous appearance, of variable dimensions, and of irregular form. Occasionally whitish, they are usually of a more yellow tint. Their surface is areolar; they are semi-transparent, yet not always so, for some may be perfectly opaque. M. Rayer has observed this lamellar appearance in those cases more especially in which the albuminous urine was acid, and deposited crystals of uric acid.

Dr. Willis glances at the pathology of the simple albuminous urine, especially of that which occurs with general dropsy. We present his brief summary of opinions. They will be an useful herald to the more exclusive sentiments of Dr. Christison, to which we shall soon pass.

"Whilst some," he says "maintain that the appearance of albumen in the urine of dropsical patients is the never-failing indication of organic mischief going on in the kidney, others have insisted that this circumstance was often indicative of simple febrile excitement of the circulating system, of some general or local inflammation of functional derangement of the kidney at most, and sometimes not even of that, the albuminous impregnation of the urine being the mere effect of a general effusion of a serous fluid into all the cavities and interstices of the body. Mr .Cruickshank in particular held albuminous urine to accompany 'every case of increased action of vessels, more particularly when this was of the inflammatory kind,' and believed that anasarca (which he calls *general dropsy*, and which he obviously considers as a disease dependent on increased vascular action) may be distinguished from the dropsy produced by a morbid condition of one or other of the viscera, from the circumstance of its always being accompanied by an albuminous state of the urine. Dr. Wells concludes his truly excellent paper, 'On the dropsies that follow scarlet fever,' by advocating the practice of blood-letting in such cases, regarding them as connected with a general inflammatory state of the system. Dr. Blackall, too, whose experience and candour deserve and secure our highest consideration, holds the presence of albumen in the urine of dropsical patients to be a certain indication of the existence either of a general inflammatory diathesis, or of some distinct local inflammation which requires antiphlogistic measures—the abstraction of blood, low diet, &c., for it is subdual.

The same idea of increased vascular action as the cause of albuminous urine, has been carried still farther in very recent days, but with a progressive disposition to localize the inflammation, and to attach it to the kidney. This is the general tendency of that section of Dr. Bright's recent admirable work, which is devoted to the consideration of 'Dropsy with an albuminous state of the urine.' The cases and observations of the Drs. Gregory and Christison have a similar bearing. In six of the fifteen beautiful plates of his magnificent work now in course of publication, Dr. Rayer has given representations of the kidneys in various *nephrites albumineuses*, or inflammations of the kidney with secretion of albuminous urine.

It is difficult to resist such high authority; nevertheless, several distinguished practitioners have opposed themselves to the fundamental notion espoused by all the names that have just been mentioned. Dr. Graves, for instance, positively denies that the albuminous state of the urine in dropsies always or even generally depends on structural change in the kidneys. He had seen so many cases in which the albuminous state of the urine entirely and speedily disappeared under the influence of proper treatment, that the only inference he could draw was, that this state frequently depended on mere functional derangement of the secreting organ. Dr. Graves was even led to prescribe opium and animal diet in some cases of dropsical effusion with albuminous urine, with the very best effects. Dr. Mateer of Belfast was led to believe that the albuminous urine of certain dropsies was sometimes the effect of stimulating tonic and saline medicines. Mercury is well known occasionally to have the effect of causing the urine to be secreted loaded with albumen. The late Dr. M'Intosh of Edinburgh, and Dr. Elliotson have also expressed themselves against the notion of structural disease as the general cause of serous urine in dropsy of the cellular tissue. Legitimate deduction from my own experience in numerous cases of anasarca succeeding scarlet fever and exposure to cold, which I have had an opportunity of treating at the Royal Infirmary for Children, would also lead me to conclude that structural disease of the kidney could not have been the cause of the albuminous state of the urine which I found almost invariably to accompany the progress of the disease. Finally, it is well known, that the urine is albuminous in the course, and especially as M. Martin-Solon has shown on the crises, of a

great number of acute diseaes. The following table from the work of the writer just quoted, exhibits the results of his experiments in this direction :—

DISEASES.	NUMBER OF CASES.	URINE COAGU.	URINE NOT COAG.	RESULT.
Intermittent Fever....	8	7	1	All cured
Typhoid Fever.....	23	19	4	21 do. 2 dead.
Rubeola.....	7	5	2	All cured
Variola.....	11	2	6	Ditto
Scarlatina.....	23	22	1	Ditto
Pleuro-pneumonia.....	24	5	2	19 do. 5 dead

In the generality of rheumatic cases, also, the urine was found coagulable by heat or nitric acid ; but no exact account of these having been kept it was impossible to insert them in the Table.

Far from being the herald of organic disease of the kidney, and therefore of despair in every case, albuminous urine would consequently appear to promise a happy termination to many formidable diseases, and to be a sign that may be often looked for with an expectation of proving advantageous." 158.

Dr. Willis grants that sero-albuminous urine is a very unfavourable item in those cases of disease of the kidney, in which the symptoms are referred to the bladder and uretha. Of this there cannot be a doubt. Yet we have seen cases of this description, of the gravest character, proceed for a length of time without terminating fatally, nay even exhibit ultimate amelioration. It must be owned that such fortunate instances are rare.

Dr. Willis concludes that sero-albuminous urine of the kind we are discussing, however, is under circumstances a symptom of very unfavourable import. In those interesting and intractable cases of kidney disease in which the symptoms are referred to the bladder and urethra, the urine is constantly sero-albuminous. I had very lately a gentleman under my care whose urine was extremely acid, of high rather than low specific gravity, mixed with a large quantity of pus and loaded with albumen. The whole of the symptoms are so nearly like those of stone, that I still flattered myself against my better knowledge, that the bladder might contain a calculus, until, having allayed the irritability of the urethra by appropriate treatment, I was enabled to introduce a sound and ascertain that this sac was empty, and for aught I could discover to the contrary, quite healthy.

From all that goes before, it is obvious that sero-albuminous urine is indicative of no particular malady; on the contrary, it occurs as a feature in a great variety of diseases, and must be met by the treatment appropriate to each of these. Generally speaking, the antiphlogistic plan,—bleeding from the system, from the region of the kidney, or from the neighbourhood of any organ that appears to be particularly affected may be considered as the rule. To this, however there are many exceptions.

We think that we must now desert Dr. Willis and scan more closely the pages of Dr. Christison.

As he divides the granular degeneration of the kidney into three stages, and attempts to appropriate its proper alteration of the urine to each, it would be useless endeavouring to amalgamate his observations with those of the gentlemen with whom we have associated him.

Dr. Christison commences by observing:—

"The disease has been variously divided by authors into several forms, by *Dr Bright* into three, by *M. Martin Solon* into five, by *M. Rayer* into no fewer than six. Of these varieties some, or even all, have been considered mere stages of the same morbid affection. The latter view is exceedingly doubtful. For not merely does the disease thus supposed to be one and the same in nature present a very great diversity of anatomical characters,—the kidney being sometimes much enlarged, sometimes excessively shrivelled, at one time little firmer than recent brain, at another harder than the hardest tubercular liver, in some cases composed of a smooth, homogeneous mass, in others finely granulated like herring roe, and in others coarsely tuberculated, so as to present somewhat the appearance of being thickly studded with peas;—but likewise the several opposite characters here enumerated may occur in different cases, where the amount of suppression of the solids of the urine during life, and the extent of disorganization of the healthy structure of the kidnies, which are the best measures of the stage or progress of the disorder, seem entirely the same. It is highly probable then, that the various forms mentioned by authors do not exactly belong to the same morbid formation.

When pathologists shall succeed in arranging these forms according to their exact relationships and true differences, some obscure points in the history of the disease, more especially in its symptomatology, will in all likelihood be cleared up. Meanwhile however such an arrangement is impracticable. And the resemblances are such between the manifestations of all the forms during life,—the leading characters of the urine in particular are so much alike, and above all there is such an identity in the secondary diseases to which they lead, and which are the direct sources of danger to life, as well as the chief subjects of treatment,—that there can be no impropriety in considering the whole forms for the present under one head. And to avoid pathological error as far as possible, it may be preferable, in following out the disease in its progress through successive stages, to look rather to the destruction of the healthy structure, than to the morbid deposit." 4.

If, upon the one hand, we see, as we certainly do, albuminous urine without appreciable organic alterations of the kidney—and, if, on the other, we find it accompanied with lesions which differ too widely in appearance to permit us to suppose that they have resulted from the same kind of morbid action, it does seem consistent with analogy and reason to believe that several diseases, nay that some forms of functional disturbance of the kidney may have a common symptom. This is the obvious deduction—the one that squares the best with the facts. If the progress of knowledge reduces these various modes of action and varieties of lesion to a simple formula, well and good. But it is not philosophical nor is it safe to anticipate. We must frame our opinions on what we know, not on what we suspect; with the progress of facts will come the progress of opinions also. When Dr. Bright, for instance, found one out of every six patients taken indiscriminately presented traces of albuminous urine, and concluded that organic alterations of the kidney obtained in that proportion, he drew an inference which, however agreeable to Dr. Christison's views, is by no means admitted by the great majority of practical and scientific physicians.

The idea of looking to the destruction of the healthy structure rather than to the nature of the morbid which encroaches on it, is convenient, perhaps, but loose. Apply the same mode of investigation to the lung. All its maladies would be attended with a common symptom of dyspnœa—with a common effect, impaired aeration of the blood. If, reasoning back from

these, we concluded on a common lesion, or argued that dyspnœa and imperfect aeration of the blood constituted a disease per se, we might find ourselves seriously embarrassed in the attempt to reconcile facts with our hypothesis. This very difficulty has occurred to Dr. Bright in the case of the kidney. Is it conceivable that one out of six patients taken indiscriminately should have granular degeneration, or indeed any lesion of the organ? p. Be this as it may, Dr. Christison divides the disease into three stages,—the incipient stage, which in some instances, if not in all, is a state of congestion or reaction,—the middle stage, where the cortical structure of the kidney is nearly or entirly destroyed,—and the advanced or final stage, where the tubular masses are also invaded and more or less obliterated.

1. *Incipient Stage.*—Dr. Christison admits that the organic alterations of structure which constitute the *essence* of granular degeneration, are not easily traced in the early stage. There are scarcely any symptoms to attract attention, and the kidneys are therefore seldom inspected in this stage. But Dr. Christison thinks it *probable* that the lesion is at its commencement simply a minor degree of the pathological characters of the middle stage, namely the deposition of a grayish-yellow, obscurely-granular matter in the cortical structure, with, or possibly without, some degree of sanguineous congestion.

"In some cases however, though comparatively few in number, the disease commences more with the characters of an acute affection. And then it may prove fatal soon after its appearance, either simply from the immediate effects of the disturbance to the renal functions, or from the development of acute, secondary disorders. Several instances of the kind have now been published by the different authors who have made the subject a study; and I am enabled to add one more to the list. From an examination of the facts hitherto collected it appears, that where the disease in its acute form proves fatal in the early stage, the kidnies are found flabby, friable and unusually large, sometimes more than twice the natural size; much darker and more vascular externally, and with points and star-like spots of ecchymosis; internally dark, brownish red, or almost reddish-black, gorged more or less with blood, which drops from a cut surface in unusual quantity; and they often present throughout their whole structure, but more especially in their cortical portion, lines, small roundish specks, or stellated spots of still darker colour, like ecchymosis, and not easily removed by washing. *Rayer* thinks he has ascertained that these spots are often the Malpighian glands in a state of congestion. Sometimes this congested state of the kidney prevails throughout the whole organ equally. At other times, as in the case recorded in the Appendix (Case 1.) the cortical structure seems chiefly affected, and presents a more distinct and more coarsely striated appearance than natural, probably from blood being injected or extravasated in lines into the fundamental cellular tissue. The cortical structure almost always seems considerably broader than in the healthy state, as if it were distended towards the circumference by its gorged condition,—a state which the French pathological writers consider to be hypertrophy of the organ. Occasionally there is also an appearance in the cortical substance of a granular matter of a dark reddish-yellow tint deposited here and there; so that its natural striated texture is somewhat obscured. But the dark colour of the parts renders it very difficult to determine these points accurately. Case 1. however seems a clear example of the kind now referred to.—The lining membrane of the pelvis of the kidney is commonly very vascular and red." 6.

The bladder is always found much contracted, and commonly contains

only a drachm or two of pale, coagulable urine, varying in density from 1014 to 1025. When death ensues from coma, this has nothing to do with extravasation, or congestion, or serous effusion. Sometimes, however, continues Dr. C. there is found extravasation on the surface of the brain, thickening of the pia mater, effusion of serosity in the subarachnoid cellular tissue, or into the ventricles, congestion of the vessels of the membranes or brain, darkness and injection of the cineritious substance, morbid tumors, &c.—some one or another in short of those organic changes which are wont to be found after death from apoplexy. These appearances, more especially congestion and serous effusion, have been far from uncommon in the practice of Dr. Bright. *M. Sabatier* mentions that effusion of serosity is common enough among children, Dr. C. adds that, in Edinburgh, they are certainly much less frequent, and the generality of cases of death by coma present no morbid appearances of any kind within the head.

So far as we have seen, coma from diseased kidney has been attended with either congestion or serous effusion within the head. It would be difficult, we conceive, for any candid pathologist to believe that renal coma is *usually* unattended with encephalic alterations. Nor is it likely that it would be so. If the retention of urea in the blood occasions coma, it is à priori likely that it would occasion it as most other substances do, by affecting the vascular system of the brain. It must, at the same time, be admitted that the fact mentioned by Dr. Christison is an important one—we allude to the infrequency of cerebral lesions in renal coma at Edinburgh.

The other secondary lesions, more particularly inflammation of the serous membranes, and dropsical effusions into the cellular tissue and the serous sacs, are rather referred and referrible to the more advanced stages of the malady.

"The blood often contains urea in large quantity; and this principle also exists in the serosity of the brain. It may be presumed to be also present in other secretions. This impregnation of the fluids with urea is an invariable fact where the urine has been suppressed or much reduced before death. It was first announced by myself in my paper in 1829; since then I have repeatedly verified the fact; and on several occasions it has been corroborated by the experience of my hospital colleagues. Those therefore who have called in question the accuracy of the original statement have either manipulated incorrectly; or they have looked for urea where it was not to be expected,—namely in cases of death from other causes besides coma, and where the urine was not defective materially in the amount of solids daily discharged." 9.

Dr. Christison attempts with diffidence, and wavers in the effort, to connect the middle stage of the disease with what has been described as the first. The link may exist but it is very indistinct, and its characters must be left to further observations and more precise inquiries. We therefore pass to the second stage, and leap over the dubious ground that separates or connects them.

2. *Middle Stage.*—Dr. Christison remarks that the deposition of granular or cheese-like matter, the only important and well-established anatomical character of the morbid formation, seems to be for the most part confined at first chiefly to the cortical structure of the kidney. There are exceptions; but they are few in number. As the morbid deposit advances, the natural

structure of the organ gradually disappears; at length the former takes the place entirely of the latter; and still the tubular portion of the organ may remain little, if at all affected. This, which constitutes his middle stage, is, in the majority of cases, well defined, not only by its anatomical characters, but also by the circumstance that now the disease first manifests itself by symptoms.

"The kidney is now sometimes larger than natural, sometimes of the natural size, very rarely somewhat diminished. Its consistence varies: If enlarged it is commonly softer than in the healthy stage, at times even friable: If diminished, it is on the contrary for the most part rather firmer, at least of natural firmness. Its colour externally is paler, sometimes uniformly grayish, grayish-yellow, or yellowish-red, more commonly of its usual brown tint, but of a paler shade, minutely mottled with gray or yellowish-gray, and often traversed by white indurated streaks, like cicatrices. When its investing membrane is removed, which for the most part may be done with facility, the outside of the kidney is seen to be more distinctly mottled brown and gray, or else uniformly grayish or yellowish, with numerous spots of vascularity, often forming lines or stellated chequerings. The surface has consequently a granular appearance, and is often actually rough from a distinct granular structure. But in this stage there is seldom the lobulated division, and very rarely the botryoidal surface, which frequently occur at a more advanced period. When a longitudinal section is made through the kidney so as to divide it into two symmetrical parts, the external portion usually occupied by the cortical structure is seen broader than natural, sometimes of the natural breadth, sometimes much narrower; and its breadth appears to depend upon whether the kidney is enlarged or contracted. This part, instead of presenting its usual reddish-brown colour, and the appearance of coarse striæ in nearly parallel lines, lying in a direction from the centre of the organ towards its surface, is grayish, grayish-red, grayish-yellow, or reddish-yellow, without any striated arrangement or parallel lines, but of a uniform, sometimes obscurely, sometimes distinctly, granular texture, chequered occasionally with reddish or brownish spots. And there is no distinction, no boundary line, between this structure and that which dips inwards between the tubular masses. When the kidney is injected, the matter according to *Dr. Bright* does not penetrate into the cortical portion. The granular structure of the morbid formation is sometimes quite distinct; more generally it is obscure to the naked eye on a cut surface, but becomes visible with a common magnifier or upon tearing the morbid tissue; but occasionally neither by tearing, nor with the aid of a magnifier of four or five powers is the granular character to be distinctly seen, or any other than a smooth homogeneous structure like that of the brain; and in a few cases the structure is not only homogeneous, but friable, and not unlike the fatty degeneration of the liver, although there is no fatty matter in it. Hence some with reason call in question the propriety of the term *granular degeneration* as applicable to all these forms; while others with no less reason suspect that the several forms may be connected with morbid deposites positively different from each other in nature." 15.

The cortical portion of the kidney may even be completely disorganized, without the tubular part being distinctly altered. But the morbid deposit may extend between the tubular masses, or even among the rays at their bases, before the disappearance of the striæ of the cortical portion. When the tubuli are thus invaded, their striæ are finer and less distinct than natural. Sometimes, according to Rayer, they present red indurations of their papillæ.

If death occurs in this stage by coma, with diminished urinary secretion, the bladder is found contracted; and the urine contained in it has a density

for the most part between 1010 and 1016, and coagulates more or less with heat and nitric acid. Urea is invariably found in the blood as well as in the serous fluids effused in various quarters. There is rather less appearance than usual of vascularity or injection of vessels in the various membranous textures of the body, as well as in the brain. So, at least, it has been with Dr. Christison.

At times, no organ save the kidney is diseased. But often various morbid alterations have been silently proceeding. The most frequent secondary appearances, continues Dr. Christison, are dropsical effusions, namely œdema of the cellular tissue at large, œdema of the lungs, serous effusion into the sacs of the peritoneum, pleura, and pericardium,—emphysema of the lungs, with redness of the bronchial membrane and mucous gorging of the bronchial tubes, as the consequences of catarrh,—the signs of recent inflammation of the lungs, redness, serous or sanguinolent infiltration, or hepatization of their tissue—the signs of recent pleurisy, peritonitis, or pericarditis, such as turbid serum effused into the cavities, and soft curd-like lymph upon the membranes,—traces of inflammation of the alimentary canal, more especially of the intestines, redness of the mucous membrane, effusion of lymph on it, enlargement of its glands, or ulceration,—tubercular deposition in the liver,—softening of the spleen,—hypertrophy and dilatation of the heart, sometimes with valvular obstructions, sometimes without them,—enlarged mesenteric glands. Among the rarer appearances may be mentioned œdema of the glottis, ulceration of the larynx, redness of the villous coat of the stomach, vascularity of the mucous membrane of the urinary bladder, induration of the spleen. In many cases too, traces are found of old attacks of visceral disease, more especially of pneumonia, pleurisy, peritonitis, and pericarditis. These secondary derangements sometimes occur in the incipient stage, especially those indicating recent inflammation. They are much more frequent however in the middle stage, and still more so when the primary disease has made farther progress.

3. *Advanced Stage.*—The morbid deposition makes progress, and affects the tubular, as it did the cortical portion of the kidney. At first, the grayish yellow matter is partially deposited between the tubular masses or even among the fibres of the tubuli,—in the one case appearing to flatten the tubuli, and in the other to expand their bases. As the disease advances, the kidneys usually diminish in size, occasionally to such a degree as not to exceed two inches in length.

"Their surface is sometimes lobulated, commonly pale, very frequently rough and irregular, or even botryoidal, like the roe of the salmon, or the mineral pisolite. The common colour outwardly is uniform pale grayish-yellow, sometimes with vascular spots, more commonly without them; but when very much reduced in size, the proper brownish-red tint is often preserved. Their firmness varies exceedingly, from that of healthy liver to that of the same organ when affected with hard tubercle; and *Dr. Bright* has sometimes found them so hard as to cut almost like cartilage. A longitudinal section displays various appearances, according as the kidney is diminished or not in size. If it is not less than natural, the portion usually occupied by the cortical structure is of the natural breadth and entirely occupied by grayish-yellow granulation, or by a homogeneous substance somewhat like fatty degeneration of the liver; the same matter is extensively deposited in the central portion between the tubular masses, and

frequently among the striæ of the tubuli themselves; and the tubuli are pale flesh-red in colour, more finely striated than natural, compressed, diminished, broken up, or some of them even entirely obliterated, and their place occupied by the morbid deposit. If the kidney, as more generally happens, is reduced in size, the cortical portion is contracted in breadth; so that the outer extremities of the tubular masses are pushed as it were towards the external surface. The tubular portion presents the same appearance with what has just been described; but the granular deposit among the tubuli is less extensive. In the progress of matters the kidney is sometimes seen converted into one entire mass of uniform granular or homogeneous degeneration, with the exception of a single tubulus at one end, or perhaps one at each extremity. In other instances, where the morbid deposition has been either scanty from the first, or has subsequently been absorbed, we sometimes find one of the kidneys exceedingly small, flabby, thin, and so entirely deprived of its proper structure, that no vestige of either cortical or tubular substance remains. In such cases, the ureter is of course useless; and in one instance of the kind *M. Solon* found its canal obliterated; but in all which have come under my observation it was pervious. In a few instances firm tubercle-like masses are diffused throughout the softer granular matter. More frequently there are little cavities or cysts interspersed; which are either true cysts, or more commonly the infundibula remaining after their corresponding tubuli have been destroyed. It is usual to find one kidney more advanced in disorganization than the other; and in general this is the right. Occasionally one of them is in the very last stage of the disease, the whole cortical and tubular structure having disappeared, while the other is but slightly advanced in the final stage, or even in the middle stage only. By thus comparing the state of the kidnies in the same cases, the successive stages of the disorganizing agent are traced, where otherwise it might be very difficult to suppose that the appearances are nothing else but different steps of one organic derangement. We may thus for example feel in some measure assured, that excessive contraction or atrophy of the kidney, whether with or without hardening of its substance, may be the effect of granular degeneration, and as, not M. Rayer seems to think, of simple chronic nephritis only." 21.

Rayer and Dr. Osborne have remarked that the renal veins often present firm fibrinous clots, ramified into their branches, and occasionally adherent. The supra-renal glands are commonly enlarged and indurated in the advanced stage. Sometimes even the fat around the kidneys acquires a firm consistence and somewhat granular structure.

There is a little blood in the heart and great vessels. Indeed the whole body presents all the appearances of excessive hæmorrhage. If many organs are usually diseased when death occurs in the second stage, à fortiori we shall find them so after death in the third. A common combination of lesions is granular derangement of the kidneys, tubercular liver, and hypertrophy of the heart, in addition to which there is not unfrequently, either emphysema of the lungs with catarrhal effusion, or recent inflammation of some serous membrane.

The chemical constitution of the matter deposited in granular degeneration of the kidneys has not yet been determined.

SYMPTOMS AND HISTORY.

The symptoms must be viewed as indicative of the primary disorder, and

of the secondary affections to which it gives rise. For the sake of precision and distinctness, it is necessary to separate these two classes.

Though granular disorganization of the kidney is usually at least a chronic disease, it may commence in either an acute or chronic form.

Acute Form.—This usually begins with decided symptoms. Generally, after exposure to cold, there is chilliness or a rigor followed by pyrexia. At the same time the urine becomes quickly scanty, at times almost, nay altogether, suppressed, highly albuminous, occasionally bloody, and in rare instances mingled with clots of blood. There is also for the most part frequent desire to pass urine, with at times difficulty or positive pain in discharging it,—not uncommonly dull, more rarely acute, pain in the loins, aggravated by pressure, and sometimes shooting downwards to the inside of the thighs or external parts of generation, and more usually pain across the pit of the stomach, and in the flanks, either felt only on pressure, or increased by it, but constantly present more or less. Sickness and vomiting are of common occurrence. This train of symptoms does not continue long, seldom indeed above two days, without the supervention of others, belonging to the secondary affections. Of such the most common are dropsy, especially of the limbs and face,—coma, with or without convulsions,—and acute serous inflammations, more especially pleurisy. Above all, however, dropsical effusion, in one shape or another, is seldom long absent; and not unfrequently it puts on the characters of what has been termed "inflammatory dropsy."

The disease may be checked by active treatment; or coma, or some acute serous affection may carry off the patient, even in four or five days. Most commonly, the symptoms lapse into those of the chronic stage. Complete recovery may undoubtedly take place; but it is often only temporary, and in other instances, it is merely apparent, because permanent organic injury has been done to the kidneys, and the urine continues essentially morbid although for a long time there may be no other sign of a deviation from a sound state of health.

Acute granular degeneration does not always present the characteristic symptoms which have been enumerated. It is more common to find dropsy or some other secondary affection developed soon after an attack of rigor, without any other interposed or concomitant symptom except scantiness and an albuminous impregnation of the urine. The real disease may thus, and not unfrequently does, escape notice altogether.

In other instances the disease appears to begin in the acute form, but has actually existed unnoticed in the chronic, for months.

Chronic Form.—This may be merely the sequela of the acute form. More frequently the disease is, from the first, insidious in character, and slow in progress. The patient's attention may not be called to it, until it has advanced considerably.

"Nevertheless even in such cases an attentive examination will not unfrequently show, that warnings of mischief going on were not altogether wanting, though the patient had neglected them. Thus it is not uncommon to find in cases apparently the most obscure in their origin, that the urine has been very long scanty, or on the other hand too abundant, or occasionally of a cherry-red

colour from a little blood,—or that it was passed frequently and with difficulty, or with positive pain,—or that there were frequent gnawing pains in the loins or flanks extending at times to the thighs or groins or scrotum. No single symptom of the kind now alluded to has appeared to me so invariable, or of so much service for indicating the commencement of the disease as the fact of the patient being regularly awakened once or oftener in the night time by the necessity of passing urine. I have scarcely ever known it wanting, where any other local symptom existed; frequently has it been present without any other for a great length of time; and it is so remarkable a deviation from the ordinary rule of health, that although it may have been neglected, no individual can fail to recal it when his memory is tasked on the subject by his physician." 20.

We cannot say that we attach the same degree of importance to this symptom, as Dr. Christison appears to do. It is usually present in degeneration of the kidney; that we grant. But it is also present in many other cases independent of renal disorganization. It is constantly observed in cases of "irritable bladder," and passes away with its other symptoms, perhaps never to return.

Dr. Christison goes on to observe, that the period during which the malady remains obscure is altogether uncertain. It may be one of months or of years.

"While matters remain in this position, incidental causes may suddenly develop the acuter symptoms detailed above; and more frequently the like causes give rise to some secondary disorder. The essential disease however is distinguished by the following indications. There is a reduction of the strength; emaciation, not always, however, considerable; a remarkable uniformity, and commonly great paleness, yet on the other hand at times a peculiar pale-brownish dinginess, of the complexion; defective transpiration as indicated by a dry state of the skin, and the want of perspiration under exercise; often a tendency to drowsiness; often too weakness of digestion or even well-marked dyspepsia, not unfrequently attended with sickness or retching in the morning on awaking from sleep; thirst;—together with an important pathological condition both of the urine and of the blood, and sometimes one or more of the various annoyances already specified as apt to attend the discharge of urine. Of these symptoms none are invariable except the altered state of the urine and blood with perhaps also the unhealthy complexion. The two former are not only invariable, but likewise very characteristic, and therefore of great importance; since they are alone amply sufficient to point out the true nature of the case, and will also in my opinion fix with considerable precision the state of progress of the disease. They will therefore require some detailed consideration." 32.

State of the Urine.—To this Dr. Christison passes, and, as he is well qualified to speak upon the subject, we shall not treat his observations lightly.

In the early stage of the acute form, the urine is sometimes natural in quantity, very rarely increased, far more generally diminished. Instead of passing between thirty-five and fifty ounces a-day, which constitute the average range of health, the patient discharges only eight, twelve, or sixteen ounces; sometimes the quantity does not exceed two or three ounces; and occasionally the secretion is altogether suppressed. The latter circumstance is the harbinger of coma.

"The urine is also much altered in its constitution. Sometimes it presents a blood-red tint of more or less intensity: occasionally the tint is so deep as

to render it opake; in a few instances clots are intermingled with it; and still more rarely the fluid discharged seems to consist of nothing but blood, which afterwards partially coagulates.* Most frequently of all, however, the colour of the urine deviates little from that of health; but in that case it is often rendered muddy or slightly opalescent by the presence of fine light particles, which do not disappear on the application of gentle heat, and consist probably of one of the modifications of the mucus of the bladder pointed out by Berzelius.—A sediment too sometimes forms when the secretion cools, which is most generally lithic acid or the lithate of ammonia, and which is re-dissolved at a gentle heat, lower than what is required for the coagulation of albumen. Occasionally I have observed a white sediment of the earthy phosphates; but this is exceedingly rare except as the result of alkalinity of the urine induced by long standing and consequent decay.—In general the urine froths more than usual when shaken; and on blowing into it through a tube bubbles are formed as with soapy water This property is confined however to the urines which are loaded with albumen.—Many specimens of urine in this stage are much more prone to decay than the healthy secretion. In some I have observed a decided ammoniacal odour so soon after its discharge that in all probability decay must have commenced within the body; and frequently so much carbonate of ammonia is formed in eight or ten hours that a powerful ammoniacal odour is exhaled, earthy phosphates are thrown down in abundance, brisk effervescence is caused by acids, and another character to be stated presently, coagulation by heat, may be prevented from being developed.—The density of the urine does not differ much from the natural standard." 34.

To determine this, the first urine voided by the patient in the morning should be made the subject of examination. Otherwise it will be modified by the influence of diuretics, drink, cold, and so-forth. But the most remarkable property which the urine exhibits in this stage is its coagulability. Dr. Christison owns and enumerates many sources of this as a temporary occurrence, and he therefore admits that it is incorrect to hold, as some do, that albuminous urine is pathognomonic, or by itself characteristic, of granular disorganization of the kidneys. At the same time he is convinced that there is no other cause, or rather there are no other causes taken together, by which an albumiuons impregnation is so often induced as by the disorder in question. He is persuaded likewise that no other cause whatever will occasion the enormous accumulation of albumen in the urine almost invariably observed in the early stage of the disease where it commences with acute symptoms.

Speaking of the tests, and arriving at the conclusion that heat and nitric acid are best, Dr. Christison adds these cautions,

"It is advisable to make use always of both tests; and this for several reasons. For first, if the urine is ammoniacal, the action of heat may be prevented even where the proportion of albumen is great. Secondly, heat alone may occasion a flaky precipitate where there is no albumen, owing to the superabundance and consequent separation of earthy phosphates,—a deposition, which nitric acid will both prevent and remove And thirdly, nitric acid alone may

* "Care must be taken, as Mr. Rees has suggested, not to mistake for the effects of disease the colours imparted to urine by many articles of vegetable food. Hæmaturia from other causes may be distinguished, as stated in M. Solon's work, by the urine ceasing to present coagulability so soon as it ceases to be red."

occasion a flaky precipitate of lithic acid; which however is re-dissolved by an elevation of temperature, while albumen remains insoluble. In regard to these sources of fallacy, I have to observe in the first place, that the urine should be always tested if possible before it decays and becomes ammoniacal. Because I have found that sometimes even nitric acid added in excess did not separate albumen which had been present in large quantity,—a fact which is probably to be ascribed to the albumen having itself undergone more or less decay along with the other principles of the urine." 44.

The quantity of albumen, though various, is always abundant in the early stage. Ten parts by weight in a thousand of urine will render it almost a thin uniform pulp when heated. Less is seldom met with in the early stage. The highest Dr. C. has yet found has been twenty-seven parts in a thousand, Here, as in all similar instances, heat converted the urine into a gelatinous mass, from which no fluid issued on turning the tube upside down.

It is remarkable, he continues, that in some instances the albumen suddenly and for a time disappears from the urine. This occurrence is more frequent in the more advanced stages of the disease. But Dr. C. has seen it at the commencement of the complaint.

Dr. Christison disputes the idea of some that the albumen is a substitute for the urea, which is deficient. He believes that the only explanation of its occurrence must be found in some peculiar irritation of the kidneys.

The urine contains an unusually small quantity of solid ingredients. This character, Dr. C. goes on to state, though presented more or less in every stage of the disease, is commonly much better marked when it is somewhat advanced, than at the commencement But it is also in general a well-defined character from the beginning, provided attention be paid to two conditions,—first, that the natural course of things shall not have been disturbed by treatment,—and secondly, that the quantity of solid ingredients discharged by the excretion be taken absolutely, not relatively to its watery part. Even the proportion of solids relatively to the fluid part is very generally somewhat diminished; because, although the density of the urine may be so high as 1020, or even 1024, this is partly owing to the presence of the foreign ingredient albumen, and consequently when the fluid is filtered after coagulation the density falls by four, five, or even seven units. But if an account be also taken of the defect in the quantity of urine, then the absolute amount of solid ingredients excreted in the twenty-four hours is almost always, perhaps invariably, very deficient. Twelve ounces of urine, of the density of 1016 after separation of the albumen, will probably constitute a fair estimate of the daily discharge in a very great proportion of cases at a moderately early stage; and this estimate infers the diminution of the daily discharge of solid matter to at least one fourth or nearer one-sixth of the healthy-average. Among the other solid ingredients, the urea is effected to a full extent.

On the whole, Dr. Christison sums up the pathognomonic characters of the urine in the *incipient* stage of granular degeneration of the kidneys, as—a reduction, but only a moderate reduction, of density, a strong albuminous impregnation, and a material diminution of the daily discharge of solid ingredients.

Passing over some remarks on the colour of the urine, and merely pausing to observe that strings of vesical mucus are sometimes seen in it, we proceed

to notice that, as the granular deposition proceeds, the density sinks from the standard formerly mentioned to 1016, 1014, 1012; and when the case has reached the advanced stage it is usually so low as 1010, 1008, or 1007, even where the quantity is rather under than over the natural standard. The lowest density Dr. C. has ever accurately noted was 1004. The amount of albumen now varies much more than in the early stage. When the proportion is as great as in that stage, above all if the density be exceedingly low, it will be found that the patient labours under symptoms of reaction or local inflammation, and that the acute form of the disease has been casually reinduced. More frequently the albumen disappears nearly or entirely, either for a time or altogether. This happens much more commonly in the advanced than in the early stage; when the disorganization of the kidneys has proceeded far, slight haziness is all that heat or acids will occasion; and often enough no alteration whatever is produced. Even in such circumstances however, the incidental recurrence of acute symptoms, attended by increased irritation of the kidneys like that which occurs often at the commencement, may cause the albumen to reappear in abundance for a time. But Dr. Christison esteems it a great mistake to suppose that the quantity of the albumen necessarily increases with the increase of the disease. The very opposite is the general rule.

Another invariable feature of the urine in the advanced stage is a diminution of its solid contents, both relative and absolute.

"The total solids of the urine in a state of health I have found to be 67.7 parts in one thousand, when the density is at 1029, and the quantity thirty-four ounces avoirdupois. When the disease was far advanced, the proportion of solids has been 24 parts in one thousand, where the quantity of urine amounted to twelve ounces, and the density was 1009.5; and the lowest proportion I have ascertained by actual experiment was 15 parts in the thousand where about thirty-six ounces of urine were passed of the very low density of 1006.9. In the latter case the total solids discharged throughout the day were reduced to one-fifth of the healthy average; and in the former to nearly one-twelfth.—It is not improbable that this great reduction may affect certain ingredients more than others. A few experiments seem to lead to the conclusion that the lithic acid and salts of the urine are more diminished at times than the urea. But this is by no means an invariable fact; neither has the difference ever appeared to me very material; so that upon the whole it cannot be included without farther investigation, among the morbid characters of the urine." 55.

The pathognomonic characters of the advanced stage are summed up as a great reduction in density, and an equal reduction of the daily discharge of solids,—frequently associated with the presence of albumen in small quantity. Deviations are however more apt to occur here than in the early stage; and among these the most important to be kept in view are the frequent absence of albumen, and the daily discharge of the full amount of solids owing to spontaneous diuresis. The only character absolutely invariable is great lowness of density, with of course a reduced *proportion* of solids.

Dr. Christison protests against the notion that the presence of granular degeneration of the kidney may be known by the condition of the urine alone.

"It is partly to correct such notions that I have dwelt so fully on the various properties of the secretion at different stages. Any one who pursues attentively

what has been said will perceive, that it must be sometimes impossible to rest the diagnosis on the state of the urine alone. In general indeed we may do so with confidence. For *first*, when the disease has continued for a short time with acute symptoms, the characters of the urine, namely, a somewhat reduced density, a diminished amount of daily discharge of solids, and high coagulability are invariable, and do not occur conjunctly so far as is yet known in any other disorder. *Secondly*, there is a very common conjunction of characters in the advanced stage, which has seemed to me never to occur in any other malady, namely great reduction of density, some diminution of quantity, much diminution of the daily discharge of solids, and slight coagulability. *Thirdly*, another conjunction not less characteristic perhaps is great reduction of density, slight coagulability and a great increase in quantity, consequently with little or no diminution of the daily discharge of solids. *Fourthly*, I have never in any circumstance, except in the advanced stage of granular disorganization of the kidneys, met with urine about the natural standard in quantity, of the very low density of 1006 or 1008, consequently defective materially in the daily discharge of solids, almost colourless, or cherry-red, or smoke-brown, or orange-yellow, and obscured by opalescent muddiness which does not disappear under rest or gentle heat,—even although not coagulable. *Fifthly*, though not absolutely prepared to state the same proposition where the quantity of urine is superabundant, and its other qualities such as those last described, I am inclined to think this condition also characteristic. But there is another condition met with occasionally which is common to this with other diseases,—namely where the quantity is natural or abundant, the density low, the daily discharge of solids natural or under the healthy standard, the colour pale-straw yellow, without either coagulability or permanent muddiness. This is the state of the urine which we observe in many diseases, and which even seems natural to some persons in good health. It is also however compatible with the presence of granular disorganization of the kidneys; and it has seemed to me to occur in one of two remarkable circumstances,—either when the disease is checked in the early stage, and a cure is going forward,—or when the disease is in the advanced stage, but has arrived at a temporary suspension of its progress." 57.

Dr. C. passes, and we pass with him, to the:—

State of the Blood.—We cordially agree with him that much may be hoped and expected from the progress of analytical chemistry, and its application to pathology. We are now almost sufficiently acquainted with the coarser and more palpable alterations of the solids—those of the fluids, and more particularly of the blood, are an almost untrodden field. Dr. Christison apologises for the imperfect character of his own observations, and remarks, with justice, the difficulty of fixing the real value of any, from the presence of a sufficient number of comparative analyses of the blood in other diseases. He presents, however, the facts that he has ascertained, and offers them as contributions to a future stock.

In the early stage, when the symptoms put on the acute form, the blood generally has the characters of inflammatory action. It is commonly cupped and buffed, and the serum is usually somewhat lactescent, and yields to sulphuric ether when agitated with a small quantity of concrete oily matter, which seems to differ little from the fat of the cellular tissue.

"The most remarkable alteration however of the serum, is a great decrease in density, together with a corresponding reduction of its solid contents. This state of the serum, which was first noticed by *Dr. Bostock* in some experiments made at the request of *Dr. Bright*, and which was afterwards observed also by

myself in 1829, and by *Dr. Gregory* in 1831, has appeared to me an invariable character in the early stage. And it farther seems to be with certain exceptions peculiar to that stage. The amount of reduction varies in different cases. It is always however very considerable,—the density which ranges naturally between 1029 and 1031, being seldom above 1022, often so low as 1020, and occasionally even 1019. [Case 7]—and the solid contents being reduced, from 100 or 102 in one thousand, to 68, 64, or even 61. The reduction, so far as I may judge from some not very careful trials, would seem to affect equally the albuminous and the saline contents. It occurs only when there is an abundant discharge of albumen with the urine, but then invariably. On account of the loss of albumen the serum coagulates loosely when heated." 61.

Another characteristic peculiarity of the serum, is the presence in it of a large quantity of urea. On this point, Dr. Christison speaks with the confidence of positive experiments. Urea, he states, is invariably found in the serum at all stages of the disease when the daily discharge of it by the urine is diminished materially, that is to about one-third of the natural amount. Hence it may be usually discovered in the early stage of the disease, provided the quantity of urine have not been considerably increased by incidental causes beyond what constitutes the common average at this period. But if the urine approach the healthy standard in point of quantity, and still more if it exceed that amount, urea cannot be detected satisfactorily, although still traces of its existence may be elicited. The most certain method of separating it is to evaporate the serum to perfect dryness in the vapour-bath, to boil the pulverized residue in absolute alcohol of 796, to drive off the alcohol, to dissolve the residue in water, which must be afterwards filtered through a previously moistened filter for the separation of fatty matter, and lastly to concentrate the watery solution to a small bulk, and add half its volume of nitric acid in a watch-glass. Sometimes immediately the whole mass becomes solid as it were, by the abundant crystallization of nitrate of urea; sometimes a scantier crystallization forms in a few minutes or an hour at farthest; and occasionally the only indication of the presence of urea is some effervescence, attended with the peculiar odour which accompanies the action of the acid upon this animal principle as it exists in urine. Two or three hundred grains of serum are commonly sufficient for analysis, where the urea is not in very small proportion.

The proportion of fibrin is usually increased in the early stage, in the ratio of the inflammatory action present, and of the buffy condition of the blood.

He thinks that the proportion of hæmatosin is little, if at all affected. We are speaking still of the early stage.

From these statements, into which we have not gone quite piecemeal, it follows, as Dr. Christison himself sums up, that the condition of the blood in the early stage of the disease is characterized by the low density of its serum and a defective proportion of albumen, by the frequent presence of urea, by the frequent increase of the fibrin, and by the proportion of the hæmatosin being unaffected. And in order to test its characters in these respects with accuracy, the precautions to be kept in view are that the disease shall be really recent, not preceded, as the acute symptoms often are, by latent disorganization,—that there shall have been no marked state of precursory ill-health from other causes,—that in particular blood-letting shall not have been practised recently before,—that the urine shall be under the natural standard in point of quantity,—and that symptoms of re-action shall

be present. The last two conditions are the circumstances which regulate the presence of urea, and the increase of fibrin

As granular disorganization advances, important changes in the blood occur. The serum is commonly not so lactescent. The clot less frequently presents the buffy coat; yet, if there be incidental inflammatory action, this appearance shews itself, and indeed it *may* do so, independently of that occurrence; when there is a buffy coat the clot is contracted and small.

"In the next place the density and solid contents of the serum, which have been shown above to be invariably much reduced in the beginning of the disease: gradually return to the healthy standard, or even exceed it. In the middle stage the serum may be often met with of rather low density, such as 1025 or 1024; and this state is always found to concur with considerable coagulabil ty of the urine. Sometimes too, even in the most advanced stage, the density is reduced as low as it ever is at the commencement, provided accidental reaction occur and thus render the urine highly coagulable. But the ordinary course is for the density and solid contents to be restored as the disease advances; and this restoration keeps pace with the gradual diminution and disappearance of albumen from the urine. In the middle stage, when the density is about 1024, the proportion of albumen and salts of the serum amounts to 630 or 660 in ten thousand parts of blood. In the most advanced stage where there was no reaction and very little coagulability of the urine, I have seen the density of the serum 1031, and the proportion of its salts and albumen to the entire blood so high as 973 in ten thousand parts. This is above the healthy standard, which according to Lecanu varies between 780 and 800,—and according to my own experiments between 816 and 853. In the same stage, in a case where general reaction and pleurisy had supervened, the density of the serum was 1021, and the solids of the serum amounted only to 583 parts in ten thousand of the blood.—In the third place, the urea frequently disappears from the serum of the blood as the disease advances; but in the most advanced stage it commonly reappears, and it is sometimes present towards the close in larger proportion than ever. The cause of these variations is apparent. The urine in the middle stage, though defective in the proportion of solid ingredients, is often not so in the total amount of them discharged daily; because, though low in density, it is frequently increased in quantity: But as the disease draws towards a close, the quantity decreases as well as the density; and at length sometimes there is an almost total suppression. Here in short, as in the early stage, wherever there is a material reduction of the daily discharge of urea, it may be distinctly found in the blood; but not otherwise." 69.

In the fourth place, the fibrin is most commonly natural in proportion, after the early stage is passed, unless inflammatory action occurs, when it is of course, increased. *Lastly*, by far the most remarkable character of the blood, in the advanced stage of the disease, is the rapid diminution of its hæmatosin. This may sink, so as to form less than a third of the healthy average. The effect of the disease in this respect is apt to be complicated with that of occasional blood-letting, which has a very great influence in reducing for a considerable length of time the proportion of colouring matter in the blood. But the reduction which takes place in granular disorganization of the kidneys is far beyond what can be accounted for by the extent to which blood-letting has been usually carried; and besides is found to be excessive where no blood has been lost at all previous to that which is analysed.

"I am acquainted with no natural disease, at least of a chronic nature, which so closely approaches hæmorrhage in its power of impoverishing the red particles

of the blood. It was stated above that the average proportion for the male sex is 1335 parts in 10,000; and that in the first week of the disease I had found it to be 1339 in a stout man not previously bled. In another man also of stout habit, one month ill, but once or twice previously bled, it was 1111; in another powerful man five weeks ill, and once before slightly bled, it was 1046 [Case 2;] in a stout porter, ill probably for two months, and once before moderately bled, it was 955; in a lad two months ill, and bled once before, and that recently and largely, it was 564 [Case 7;] in a gentleman six months ill, and not bled for eighteen months, when he had a severe attack of pneumonia, it was 491 [Case 14;] and in a young man ill for three months and a-half subsequent to scarlatina, and who had never been bled before, it was only 427 [Case 10.]" 72.

Thus in the advanced stage of this formidable malady, the proportion of hæmatosin is invariably and greatly reduced; frequently the solids of the serum are also defective, sometimes on the contrary in excess; and not unfrequently, especially if the disorder is very far advanced, the serum likewise contains urea.

The leuco-phlegmatic complexion is one of those symptoms which flows directly and obviously from the reduction of the quantity of hæmatosin. Sometimes a pale, transparent, waxy, and very characteristic hue is produced. At other times, says Dr. Christison, a peculiar dingy brownish tint is communicated, which seems to depend in general on the original complexion being dark but is occasionally observed also where the natural complexion had been fair and florid. The latter appearance is most distinct in those who have never had dropsical effusion along with the primary disease, or who have been much affected with disorder of the functions of the stomach; and we sometimes observe the pure leucophlegmatic tint give place to the dingy brown hue in the advanced stage in those, who had been dropsical at the beginning and subsequently got rid of the anasarcous effusion. Where the countenance is somewhat puffy from œdema and the primary disease is moderately advanced, the leucophlegmatic waxiness of the complexion is most characteristically developed. Sometimes the proper pale or dingy tint is altered, either by general reaction inducing some degree of florid flushing of the face, or more frequently by obstructions to the respiration or to the action of the heart creating an obstacle to the free return of blood by the veins, and so occasioning lividity.

III. Secondary Diseases.

These form the subject of the third section. We shall not follow Dr. Christison so closely as we have done. The chemical and analytical ground over which we have passed is that which Dr. Christison is eminently calculated to cultivate with ability and success.

Anasarca is by no means a necessary consequence of granular degeneration. This, however, seldom continues long without additional symptoms and diseases supervening.

The secondary affections of most frequent occurrence are dropsy, diarrhœa, pleurisy and peritonitis, pneumonia, catarrh, dyspepsia, and chronic vomiting, coma with other affections of the head, chronic rheumatism, organic diseases of the heart, and organic diseases of the liver.

1. *Dropsy.*

Anasarca, as our readers know, is the most frequent of all the secondary affections. It has been viewed, indeed, as an essential symptom: but this is certainly erroneous. According to Dr. Christison, the proportion of dropsies dependant in part or wholly upon organic disease in the kidneys is, in Edinburgh, not less than three-fourths of the whole. At Strasbourg Professor Forget has found the proportion to be one-half. Of course these statements of facts preclude all argument; but we think that we are borne out in affirming that the proportion in London is by no means so great. The number of dropsies from diseases of the circulating organs, greatly, we should say, exceed those which may fairly be laid to the kidney.

The parts most commonly affected by the anasarca are the lower limbs. But the whole external cellular tissue may be so, and that of the face very often is so. When great, it may be attended with effusion into the serous cavities, but this seldom assumes a prominent form unless peritonitis or pleurisy has contributed to its development.

Dr. Christison alludes to the division of dropsies into inflammatory and atonic. His sentiments on their respective connexions with granular degeneration are not undeserving of attention.

1. "A very great proportion," he says, "of cases of inflammatory dropsy depend on organic disease of the kidneys. By inflammatory dropsy I understand serous effusion into the cellular tissue, more or less acute, and attended with distinct febrile reaction, sometimes with acute visceral inflammation. Of dropsies of this kind I have not myself met with a single case during the last nine years, where there were not unequivocal signs of the kidneys being diseased." He grants that exceptions have been taken to such statements; but he repeats that they express the experience of himself and of his colleagues. The dropsy after scarlatina is claimed by Dr. C. for the kidneys.

"On so wide a field my own opportunities have not been such as to warrant a confident opinion. I can only say, that in every case of dropsy after scarlatina which has been under my own care, and in several others as to which I have been consulted, the kidnies were affected. But it is fair to add that I have had an opportunity of once or twice examining the urine, where dropsy was conceived by other practitioners to be threatened in consequence of one of its earliest signs appearing, namely puffiness of the under eyelids; and that the urine proved to possess its natural characters. In these instances however the dropsical affection was never more unequivocally formed afterwards; and its existence at all was therefore doubtful" 81.

We certainly are not disposed to go these lengths, though we do believe that a *large* proportion of inflammatory dropsies hinge on morbid states of the kidney.

According to Dr. Christison's observation, all cases of anasarca where the œdematous parts do not pit upon pressure are connected with granular disorganization of the kidneys. Such cases are commonly of the nature of acute or inflammatory dropsy. Yet they are not so necessarily; for he has seen repeated instances where œdema, not pitting on pressure, and of considerable extent, concurred rather with an atonic state of the circulation. But in every case that has come under his notice, since 1838, the effusion was clearly connected with diseased kidneys. In the majority of cases, however, of renal dropsy, the anasarcous swelling pits readily.

"3. All dropsies where the urine is steadily above the healthy standard in point of quantity occur in connexion with granular kidney, except in the instances of dropsy attending the advanced stage of saccharine diabetes. The fact of an inordinate flow of urine attending a hydropic state of the cellular tissue without diuretics, is one to which little attention has been paid by pathological writers. It is nevertheless of undoubted occurrence: nay by no means unfrequent. I have never witnessed it where the dropsy seemed to depend on diseased heart, lungs, or liver, provided the kidnies were not also affected. But I have repeatedly observed it where the effusion concurred with the signs of disease in the kidnies alone. I have seen the effusion maintain its ground or even increase somewhat, where the daily discharge of pale albuminous urine, low in density, and defective in urea, amounted to five, eight, or even ten pounds for weeks together, nay, in one case for several months. And it is still more extraordinary, that in not a few instances of the kind the anasarca subsists or increases, though not merely the urine is abundant, but likewise the daily discharge of solids with the urine fully equals or surpasses the natural standard. Such cases are most common, as appears to me, in the middle stage of the primary disease. Few pathological phenomena are more remarkable. Yet there is an analogous fact in the production of anasarca of the limbs on some occasions in the advanced stage of diabetes mellitus, where the daily discharge of urine, and of solids with the urine, is still greater." 83.

4. Dr. Christison is inclined to think (he hardly ventures farther) that all dropsies, where the urine, not being above the healthy standard, in quantity, or being below it, is also below 1010 in density, are connected with granular disorganization of the kidneys, whether the urine be albuminous or not. Dr. Christison takes this opportunity of repeating that albuminous impregnation of the urine in dropsy is not a positive indication of the kidneys being diseased—that it is not invariably present in the early stage—and that it is inconsiderable, or may be permanently wanting, in the advanced one.

Dr. Christison just touches on the probable cause of dropsy in cases of renal disease. He leans, and perhaps he is right in doing so, to the supposition of Sabatier, that the dropsical effusion arises simply from the increased tendency to transudation caused by the tenuity of the blood.

Anasarca usually exasperates all other secondary disorders, and its removal usually relieves them. Yet Dr. Christison has seen the contrary. The dropsy is generally removeable.

2. *Dyspepsia and Chronic Vomiting.*

Dyspepsia, which at times assumes the form of chronic vomiting, is almost on a par in point of frequency with anasarca. Dyspepsia, indeed, is common in all diseases of the kidney, but it is more particularly so in this. The affection of the stomach is most frequent and most severe in the middle and final stages of the disease. It seems to be independent of general reaction or active local inflammation, and is indeed often greatest when the circulation is unusually languid, the morbid action in the kidney purely chronic, and all other organs free of acute disease. It is, for the most part, removed with difficulty.

3. *Diarrhœa.*

A very common secondary affection, at least in the practice of Dr. Christison. It seems, he says, in general connected merely with inordinate

irritability and increased discharge of mucous secretion; but sometimes too it plainly originates in dysentery, and is connected with ulceration of the inner membrane of the intestines. It is frequently, yet not always, attended with pain in the bowels. The evacuations present considerable variety, having sometimes the appearance of the discharges occasioned by saline laxatives, sometimes again that of a turbid watery fluid with little intermixture of fæculent matter, sometimes that of broken-down fæces mixed with many small membrane-like shreds, such as occur in the middle stage of dysentery; and at other times blood is mingled with them in more or less abundance. This is sometimes a mild affection; more generally it is severe and troublesome; and often it is excessively frequent and exhausting. He has seen, but rarely seen, a watery diarrhœa carry off the dropsy and then cease. Diarrhœa being much more frequent in Edinburgh than in England, Dr. Christison attributes its frequency, and probably with justice, to the watery, vegetable, and frequently acid diet of the lower orders of Edinburgh.

It is most apt, he informs us, to prevail in the advanced stages of the disease, in the early stage it is not frequent and readily recedes; and brisk cathartics may be freely used without much chance of inducing a permanent diarrhœa. But when disorganization is somewhat advanced, active hydragogue cathartics are apt to bring on obstinate looseness of the bowels; and the same complaint often breaks out without any apparent exciting cause. It is commonly, and in the advanced stage of granular disorganization almost always a very obstinate affection; sometimes no remedial measures will do more than mitigate its severity; and in not a few cases it has seemed the immediate cause of death.

4. *Pleurisy and Peritonitis.*

These, not unfrequent secondary affections in London, are comparatively rare in Edinburgh, and, according to M. Solon, are not very often met with in France. Pleurisy is more common than peritonitis, or than pericarditis. It is often latent. Though obstinate and severe, it usually yields to active treatment.

5. *Catarrh.*

Dr. Christison esteems acute and chronic catarrh, especially the latter, often associated with confirmed pulmonary emphysema, often independent of it, as very frequent secondary affections. The complaint sometimes commences as acute bronchitis, but ordinarily, in hospital patients, it has presented the characters of chronic catarrh; at admission, and, so far as the histories could be trusted, it seemed to have begun obscurely and advanced by degrees, without symptomatic fever. It has always been most severe when associated with emphysema of the lungs. In such instances the symptoms have often been very urgent, the dyspnœa being severe, the expectoration profuse, the respiratory murmur strongly catarrhal, and the gorging of the lungs well marked by dulness of percussion and absence or obscurity of respiration in the lower regions of the chest, more especially behind. It is not an uncommon cause of death where granular disease of the kidneys exists, particularly in a rather advanced stage; and it is very generally an obstinate affection. Nevertheless it is often removed by proper treatment. On the

whole, however, when severe catarrh, whether acute or chronic, frequently recurs or assumes an obstinate character, the complication is unfavourable, and the patient seldom survives long, though the immediate cause of death may be some different disorder.

6. *Coma and Apoplexy.*

Affections of the head more or less allied to apoplexy, appear to constitute the natural termination of granular degeneration. Drowsiness and torpor are common symptoms throughout its course. Simple apoplexy, either suddenly supervening, or commencing in the form of stupor, which slowly advances to deep and imperturbable coma,—and without any commensurate or particular morbid appearance being presented within the head after death, is so frequent as to have universally attracted attention. When it presents itself in the advanced stage of granular degeneration, Dr. C. has generally observed it make its approaches gradually, first in the shape of unusual drowsiness and dimness of vision, then of constant torpidity, at length of stupor, which soon passes into complete and irrecoverable coma; and more than a week or ten days may elapse between the first indications and the final issue. In the early stage of the granular disease again,—and this secondary affection may occur in the very earliest stage,—its advances are more rapid: after a short preliminary stage of drowsiness, or delirium, or both together, deep stupor is quickly formed, and apoplectic coma supervenes; which may end fatally, sometimes without convulsions, more commonly with them, and in less than two days from the first appearance of head symptoms.

"Cases of this kind," he goes on to state, "are very generally connected with suppression of urine. Before the drowsiness or delirium comes on, the urine becomes greatly diminished in quantity, sometimes altogether suppressed; and the secretion very seldom continues a few days in this state without comatose symptoms beginning to threaten. In relation to this statement however two facts have struck me as not a little remarkable,—namely, that on the one hand extreme diminution of urine is not essential to the establishment of stupor and coma,—and that on the other hand stupor and fatal coma are not essential consequences of an excessive diminution. On the first point I may simply observe, that I have known coma form and prove speedily fatal, where thirty ounces of urine were discharged daily up to the time of death. As to the urine becoming much reduced in amount, and that for a great length of time, without coma necessarily following,—if we look merely to the solids of the urine as the essential object of this excretion, there can be no question that for weeks together the daily discharge may be reduced to one fourth of the natural amount, without any symptom of an affection of the head supervening. I have repeatedly witnessed such an occurrence; where moreover the analysis of the blood showed that it was loaded with urea. Farther, in one very interesting case, that of Johnson, No. 3, the patient passed no more than two ounces of light urine daily for nine days before death, yet he remained sensible to the very last minute of his existence, and died simply of inanition and exhaustion from constant vomiting of every thing he swallowed. Still the reciprocal connexion between suppression of urine and coma as a general fact cannot be questioned. Whenever the urine continues very unusually reduced in amount, and still more altogether suppressed, the supervention of coma may commonly be looked for in the course of four days; and if drowsiness comes on, while the urine is in either of these states, fatal coma is seldom to be averted." 95.

Coma is not necessarily connected with dropsical effusions, for it may oc-

cur without any, or after they have been removed. But if the dropsical fluid be allowed greatly to accumulate, drowsiness, the first symptom of the affection of the head, very soon makes its appearance in the generality of cases; and it will speedily pass to fatal coma if not controlled. But the removal of the dropsy will usually remove the drowsiness.

Dr. Bright has seen the head affection assume the shape of epileptic convulsions.

Dr. Christison does not agree with Dr. Osborne in thinking that the comatose affection is usually a low form of arachnitis. It is always a very formidable symptom, and drowsiness, its herald, should be met with promptness.

"The connexion of coma and suppression of urine with granular disorganization of the kidnies is one of the most interesting facts which have been observed in its pathology. It advances us by one important step in our knowledge of suppression of urine considered as a disease. For I am persuaded, from what has been the result of the conjunct experience of the several practitioners of the Infirmary of Edinburgh for the last eight or ten years, that few cases of fatal suppression occur except in connexion with granular degeneration in its early or advanced stage; and in my own experience this connexion has been invariable. Several instances have presented themselves where the true origin of the disease was not suspected during life, but was discovered in the dead body." 97.

7. *Chronic Rheumatism.*

Dr. Christison regards this a frequent secondary affection. The form in which it commonly appears is that of mere neuralgia, without swelling or redness of the affected parts, and seated in the muscles more frequently than the joints: but sometimes swelling of the joints may be remarked.

8. *Pneumonia.*

Dr. C. has seen only two well-marked, and two latent cases of this kind.

9. *Diseased Heart.*

Dr. Christison is compelled to acknowledge the difficulty of determining, in many instances, which existed first, disease of the heart or of the kidneys. He observes:—

"The fact is that, with the exception of anasarca, and perhaps catarrh and dyspepsia, no complication is more common than that of granular disorganization of the kidnies with enlargement and obstruction of the heart, or with enlargement and tubercular derangement of the liver, or even with organic disease in both viscera at once. All who have written on the subject agree in this; and the ulterior experience of my colleagues and myself in the Edinburgh Infirmary completely corroborates what was stated to that purport by Dr. Bright, and afterwards in my own paper, as well as by Dr. Gregory. The exceeding frequency of disease of the heart in connexion with granular kidney and anasarca has even led some pathologists to doubt, whether the anasarca, which Dr. Bright and his followers have ascribed to the morbid condition of the latter organ, may not really arise from organic alteration in the former. And this doubt unquestionably derives some plausibility from the fact, that the respective state of advancement of disease in the two organs, equally with the history of the symptoms throughout their progress, indicates that of the heart to be often prior in its commencement. On the other hand however the same criterions will often show as clearly that the prior disease is the affection of the kidney; and besides there are very many

cases where the affection of the kidney subsists, even in an advanced stage, without any change whatever in the structure of the heart." 100.

He goes on to add, that from the exceeding frequency of enlarged heart, with or without valvular obstruction, some conceive that its concurrence is more than accidental; and this suspicion derives support from the ascertained fact that in a large proportion of cases of such concurrence, the history of the symptoms, or the relative advancement of the two organic diseases as determined by inspection after death, shows that the disease of the kidney is the prior in date. If granular disorganization does really act as a predisposing cause in exciting enlargement of the heart, the probability is, as Dr. Bright points out, that this influence is exerted through the medium of the changes produced in the blood, which may act too powerfully as a stimulus to its contractions.

This is the point which offers the main obstacle to the reception, without considerable modifications, of the extreme views of Dr. Bright, Dr. Christison, and others. Those who receive those views with hesitation refer to the heart and liver as the frequent causes of the dropsy which the above-named gentlemen attribute to the kidney. And we must own that we think they often do so with justice. So far as we have seen, the heart and liver have played a far more prominent part in the production of dropsy than the kidneys have, and formed, after death, the more prominent lesions. The usual cause of diseased kidney is, à fortiori, a cause of diseased heart and liver—we mean, of course, intemperance. It is probable that the one does not so much produce the others, as that the same cause may give rise to all. The question is one of priority, and plus or minus. It is only by an accurate observation and record of facts that it can be solved.

10. *Diseased Liver.*

The difficulty of determining antecedence is admitted by Dr. Christison, even more explicitly in the instance of disease of the liver. The difficulty, too, of determining the alteration of that organ is insisted on. Percussion is a valuable adjuvant, but if there be only tubercular degeneration, without enlargement, percussion, of course, gives no assistance. The conjunction of ascites, to any *extent*, with anasarca, offers a means of diagnosis.

The connexion of the disease of the kidney and liver suggests the following train of doubts and of suggestions on the part of Dr. Christison.

"The conjunction of diseased liver, as well as of diseased heart, with granular degeneration of the kidnies is in all probability something more than accidental. The frequency of such conjunction is perhaps alone sufficient to show that they stand in some natural relation to one another. It is not improbable too that there is some alliance in nature between the morbid depositions on the valves of the heart, in the substance of the liver, and in the structure of the kidnies, by which the organic disease in each organ is essentially constituted. There is at least a resemblance in appearance and some similarity in consistence; but I am not aware that any attempt has yet been made to discover what analogy prevails between them in other respects, more especially in chemical properties and composition. In the meantime it seems tolerably well established, that the same constitutional state, whatsoever that state may be, which favours the development of granular disorganization of the kidnies, promotes also the formation of chronic organic disease in the liver, and of valvular obstructions of the heart.

These observations, on the mutual affinities between organic derangement of structure in the heart, liver, and kidnies, lead me to remark farther, that tubercular liver and depositions on the cardiac valves are not the only diseases in which granular disorganization of the kidnies appears in the shape of a secondary affection. It has been shown that many formidable diseases are apt to occur in constitutions invaded by the disorder of the kidnies. On the other hand this same disorder is apt to present itself in constitutions sapped by various other diseases. These it might be advantageous to inquire into in the present place. More facts however are still wanted to render the inquiry satisfactory." 105.

He adds that granular degeneration of the kidney appears to engender an infirmity of constitution which renders the body prone to diseases generally. This is shown by the frequency with which the kidneys are found more or less affected after death in a great variety of other disorders, although their condition may not have attracted notice during life, and although none of the more strictly secondary affections showed themselves. In particular it would appear that granular degeneration of the kidneys at a moderately advanced period of its progress renders the body peculiarly open to the invasion of some epidemic diseases. These organs have been frequently found far advanced in granular disorganization in cases of death from typhus, which for some years has been extensively epidemic in this city. And the same morbid appearance was found in considerable proportion of the fatal cases of malignant cholera.

IV. CAUSES.

Dr. Christison admits, what is more true than new, that the causes of most chronic visceral diseases are obscure. Nor is granular degeneration of the kidneys an exception.

The exciting cause is, very commonly, exposure to cold, or to cold and wet together. In four of M. Solon's cases, the patient referred his illness to a blow upon the loins. In many, if not in most instances, no obvious exciting cause is recognizable.

It is probable that some constitutional infirmity must have predisposed to the complaint. Yet such infirmity is not always evident, and the apparently robust are victims to it. But, of all the predisposing causes, none has appeared to play so important a part in Edinburgh, as intemperance. A large proportion of cases have occurred in the persons of habitual drunkards. It is not necessary however that the vice of intemperance should be carried to so great an excess; for a still larger proportion perhaps is composed of those, who, without deserving the designation of habitual drunkards, are in the constant practice of using ardent spirits several times in the course of the day, and of occasionally indulging to intoxication. Dr. C. thinks that he is justified in reckoning the proportion of cases referable to intemperance at three-fourths, or even four-fifths of the whole. Nor is there any difficulty in conceiving that the stimulation of the kidney by fermented liquors should induce disease of it.

But, as Dr. Christison observes, granular degeneration may occur in persons who have not been intemperate. It is occasionally noticed at a period of life when habits of intemperance are out of the question.

"In all such cases, and I may add in all other instances where the disease has appeared either during adolescence or in young adults, whether connected or not with intemperate habits, the individuals have appeared to me to present characteristically the peculiarities of the strumous constitution. The same connexion may be often traced in persons of middle age or advanced life by mere inspection of their physical development; and in others, where the physical characters are obscure, the relationship may still be discovered by the presence of other strumous disorders, or a liability to them,—as for example by indolent chronic ulcers of the legs, scars indicating their occurrence at former periods, or tendency in youth to enlargement of the lymphatic glands. I have very little hesitation therefore in putting down the scrofulous diathesis among the predisposing causes of granular disorganization of the kidnies. The connexion has even at times seemed so invariable, that I have been inclined to suspect the strumous diathesis to be the prime and only essential condition, and intemperance no more than an accessary predisposing cause in any case. However this may be, there seems little doubt, that the disease is in no circumstances developed with greater certainty than where both conditions concur,—where habits of intemperance have been engrafted upon a strumous taint of the constitution." 112.

Dr. Christison seems struck with the idea of a connexion between scrofula and granular degeneration of the kidney. He almost hints that the latter will turn out a result of the former. He leans aslant upon the occasional connexion of phthisis and granular degeneration, a connexion which we must confess we think unfrequent.

Scarlatina is another predisposing, perhaps exciting cause. Dr. Christison reluctantly owns that it may admit of question whether all cases of dropsy, after scarlatina, are connected with granular degeneration of the kidneys. But he eagerly affirms that such is the nature of a very large proportion of them.

After again owning the meagre nature of our information, Dr. Christison adds:—

"Several agents were formerly mentioned, namely, mercury, cantharides and peculiar articles of diet, which have the property of inducing an albuminous impregnation of the urine in particular individuals. These facts were adverted to as a caution against the unreserved conclusion that albuminous urine alone will infer the presence of kidney disease. But as the foreign impregnation arises from the causes in question only in some individuals,—as instances of the kind are indeed rather uncommon, it may fairly be made the subject of inquiry, whether they do not present themselves in those only who are by constitution predisposed to granular kidney, and consequently whether they may not be considered as instances, where the disease is threatened, and might be induced by frequent repetition of the exciting agent. I think it deserves inquiry whether the use or abuse of mercury in particular constitutions may not lead to granular disorganization of the kidnies: for I have met with a sufficient number of cases to excite a suspicion to this effect." 116.

Dr. Christison's suspicion may prove accurate. Yet it mut be obvious how loth he is to connect albuminous urine with any thing but granular degeneration of the kidney.

The complaint is more frequent, and the reason why it should be so is obvious, in males than females—at middle life than at any other period. It is most rife between the ages of thirty and fifty. But old age is not exempt from it. Our author had lately under his care a man of seventy-nine, who was affected with it in the middle stage, and who recovered both from ex-

tensive dropsy and from long-continued obstinate diarrhœa; and at the age of sixty it is not uncommon. On the other hand it is often enough met with in early adolescence. He has twice had fatal cases at the age of seven or eight years; in another instance at the same age complete recovery was accomplished; and if we are to suppose, he says, that all cases of inflammatory dropsy after scarlatina depend on granular disease of the kidneys, which may be strongly suspected to be the fact, then the occurrence of this disease in infancy must be considered as a familiar event.

The disease *seems* less frequent in the middle than in the lower classes. Likely enough: for the former are probably less intemperate, and certainly less exposed to wet and cold.

Dr. Christison contributes some scanty observations to the elucidation of the influence of modes of occupation on the production, or on the course of the disease. Among twenty-six males, there were three night-watchmen, three dissipated old soldiers, three weavers, two labourers, two street-porters, a blacksmith, a distiller, a town-carter, a country surgeon, two seamen, a travelling hawker, a mason,—twenty-one in all, whose occupations subjected them either to unusual exposure or to intemperance, or to both together.

V. PROGNOSIS.

1. This forms the subject of the fifth section. Dr. Christison, upon the whole, does not take so gloomy a view of the disease as might be thought. And he is right, for our knowledge is too recent and too vague to permit us to say positively what lesion may and what may not be recovered from. Where the disease has been recent, it has seemed entirely removed. Recovery is not uncommon, from the dropsy succeeding scarlatina. In other cases every symptom has disappeared except coagulability of the urine, and the individuals have continued for a long time afterwards to follow a laborious occupation in the enjoyment of tolerable health and without any material uneasiness. But we need not add that, so long as albumen is secreted by the kidneys, the case must be regarded with distrust.

"That in its advanced stage, when the cortical and tubular textures of the kidnies have been invaded and partly destroyed, the disease must ever remain incurable, I need hardly say. For even though the granular deposit should be absorbed and thrown off,—of the possibility of which, moreover, there is hitherto no clear evidence, still medical art cannot be expected to restore what has been lost of the specific and renal structure. But I cannot help thinking that in such a situation some physicians are prone to entertain an unnecessarily desponding view of their patients predicament. It has seemed to me clear, that, even where the disease has reached a pretty advanced stage in its progress, the patient may be brought by due treatment into such a condition, as to live without material uneasiness for a term of years, of which our present knowledge cannot well settle the limit,—provided he avoid improper exposure to cold, intemperance, and other irregularities in regimen. It is impossible perhaps to remove the disorganization: but its farther advancement may be checked for a time, before it has proceeded so far as to be incompatible with the enjoyment of tolerable health and comfort. Such in particular is not unfrequently the result where no other secondary disorder has fastened on the constitution except dropsy." 123.

2. Dr. Christison makes some remarks on the prognosis of the several

secondary affections. The only one which we need notice, refers to the removal of the dropsy from diseased kidneys. This is usually, though gradually, effected.

3. The special indications of a favourable or unfavourable issue from the conclusion of this section.

The risk to life, writes Dr. Christison, is by no means proportioned to the amount of albumen in the urine. The reverse indeed holds true in some measure. For where the albumen abounds, the organic derangement of structure is commonly in its early stage; and hence there is less immediate danger to life, provided the concurring incidental diseases, which in this stage are chiefly inflammatory in their nature, be actively treated. The diminution and ultimate disappearance of the albumen from the urine is a favourable sign, and is generally accompanied with marked amendment in other more tangible points. Singly however it may be a doubtful prognostic. If attended with a moderately high or gradually increasing density of the urine, whether with or without an increase in its quantity, the diminution and disappearance of albumen are favourable signs. But this will, on the contrary, rather indicate a gradual advancement of the disease, if the density of the urine should at the same time slowly decrease, especially where its quantity remains stationary. Diminution of the albumen, with increased quantity and diminished density, cannot be relied on as a prognostic on either side.

The risk, he goes on to add, is not altogether proportional, as might reasonably be supposed to the inflammatory condition of the blood. The blood seldom presents the buffy coat so well-marked as at the commencement of the organic disease in the kidneys. Such a state of the blood clearly indicates, it is true, a greater risk of incidental local inflammations arising. But then it is, in common with such inflammations, under the control of medical art.—The danger to life may be considered material in all circumstances where the blood is greatly defective in colouring matter, provided the diminution be the result of the disease, and not of other incidental causes, such as frequent blood-letting. The decrease in the proportion of colouring matter may be held, as was formerly explained, to be a correct measure of the progress made by the disorganizing agent. It need scarcely be added that the disappearance of an inflammatory state of the blood is a favourable sign, because there is less risk of the supervention of local inflammation.

We need scarcely observe, after what has been already said, that the risk of life is not necessarily in proportion to the amount of dropsical effusion, for this is generally within the range of remedies. But though the disappearance of dropsy is a favourable sign, yet it does not necessarily indicate the removal of the tendency to other secondary affections; nay coma does occasionally follow hard upon it.

"The patient's danger is on the whole in proportion to the lowness of the density of the urine; and the reason obviously is, that the lower the density of the urine, the farther has the organic alteration in the structure of the kidney advanced in its progress. This rule however applies only where the quantity of the urine is not materially greater than the natural average. On the other hand, it applies with peculiar force where such urine is also defective in quantity. For example, the patient may always be considered in imminent danger where the urine has a density of 1008 or 1010, and its quantity does not exceed twelve ounces daily.

In reference to this article of prognosis, it would perhaps be preferable that physicians were to look less to the mere density and quantity of the urine abstractly, and more to these qualities as constituting a measure of the amount of daily solids excreted. It is the diminution in the daily discharge of solids with the urine that constitutes essentially the unfavourable prognostic. Nature allows of a considerable variety in respect of the discharge of solids in the urine without the health being necessarily affected. This may be remarked on studying the condition of the urine both in different individuals and in the same individual at different times. The history of the present disease shows that a very extraordinary diminution from the natural standard may take place for a great length of time, without at all events any immediate or very obvious risk to life. We see patients frequently living for many weeks in the comfortable enjoyment of tolerable health though the amount of solid excretion by urine is diminished to fully one-third of the natural daily discharge. Seldom however does the quantity fall to one-fourth without troublesome secondary disorders forming; and any material reduction under that amount is speedily followed by urgent symptoms, most generally by drowsiness, leading on to stupor and coma." 131.

Suppression of urine is a very fatal symptom. Dr. C. has never known (save once) a patient survive more than a few days, when the daily quantity of urine has fallen even to three or four ounces. In that case, however, of suppression with acute dropsy, the patient recovered under active antiphlogistic treatment.

Gradual augmentation of the density of the urine, the quantity at the same time being natural, or at least not much below the natural standard, is always a propitious symptom.

VI. TREATMENT.

This, as usual, winds up to the descriptive and doctrinal part of the work. It need hardly be observed, that the treatment resolves itself into that required for the primary, and that applicable to the secondary affections.

1. *Treatment of the Primary Disease.*—In the early stage, the symptoms usually indicate, and experience confirms, the utility of active antiphlogistic treatment, of venæsection, followed by leeches and cupping on the loins, and these succeeded by blisters, setons, or issues, as the case may be. Dr. Christison recommends as an index of the propriety of following up depletion, a careful examination of the composition of the blood, more particularly in reference to the amount of its hæmatosin. The best sign of improvement from depletion is when the urine speedily increases in quantity, loses more or less of its coagulability, and maintains or increases its density.

Dr. Christison passes to diaphoretics, so naturally and so much recommended, especially by Dr. Osborne. Yet Dr. Christison hints exaggeration in the confident and flattering statements of the the latter, and we cannot but think that he *has* outrun the anticipations which experience sanctions.

"I sincerely wish," says Dr. Christison, "that my experience of the effects of the diaphoretic plan could bear out the very sanguine encomiums bestowed upon it by Dr. Osborne. He endeavours to show by a numerical statement, that his success with diaphoretics has greatly exceeded that of any other practitioner who has followed a different method of cure. He alleges in regard to dropsy,

that he 'never failed in removing it whenever the entire surface was restored to a perspiring state.' And in another passage he writes in Italics that 'whenever general perspiration came on, either spontaneously or in consequence of medicine, then the cases always terminated favourably.' Since the announcement of his method I have often resorted to it, sometimes with evident advantage, much more generally without success; and I must likewise add, that I have several times seen general perspiration, both spontaneous, and from the use of diaphoretics, fail to produce any material relief. Still no one can question the general propriety of the diaphoretic method of cure." 137.

The most efficient diaphoretic, in our author's hands, has been Dover's powder in the dose of five or eight grains three times a-day. With this should always be conjoined the warm-bath every twenty-four or forty-eight hours. No other remedy gives more relief for a time, and patients who have had it once, in general importune the physician to have it repeated; so that its ultimate good effects can scarcely be doubted. It commonly occasions sweating for some time afterwards, and and is followed by quiet sleep. Extract of hyosciamus is a good sedative—James's powder another eligible diaphoretic.

Laxatives are useful, active purgatives hazardous, save when dropsy or coma supervenes. Dr. Christison speaks rather favourably than otherwise of diuretics. After noticing the objections which have been advanced against them, objections both of fact and theory, Dr. C. observes:—

"Here," however, "it appears to me that the argument has been pushed too far, and to the establishment of a serious practical error. It does not follow, because diuretics by their stimulus cause increased flow of natural urine, that they will also cause an increase of morbid secretion. The irritation which excites the former may be different from that which excites the latter. That they really are different in kind would appear probable, as well from the extreme difference of their products as from the fact that diuretics, when they increase the flow of urine in this disease, very rarely, so far as I have observed, increase the albumen, which in the early stage may be held to be a correct measure of the degree of morbid irritation. I have even repeatedly seen the albumen disappear under diuretics. But, if the two irritations be different in kind, we may infer from our numberless parallel instances in regard to inflammation and irritation in the organs and textures of the body at large, that the one may be induced, without necessarily increasing, nay possibly enough with the effect of diminishing, the other. Theory therefore is not at variance, as some imagine, with the employment of diuretics in granular disease of the kidnies. Neither for my own part have I had occasion to observe any distinct facts which would lead to a conclusion in any way different. Diuretics, I repeat, do not increase the coagulability of the urine in the early stage: In many instances they seem to diminish it. In the advanced stage there are no easy and sure criterions for judging the progress of the primary disease; but so far as one may judge, it does not appear that disorganization at this period is promoted by the operation of diuretics." 140.

So far as we have seen, diuretics have not appeared to benefit, but rather to aggravate the renal symptoms. When irritation of the kidney has been conjoined with an albuminous condition of the urine we are satisfied that, in our hands, diuretics have *not* proved of service. When dropsy or coma has supervened or is impending, the case, no doubt is altered. "Yet, even here, we conceive that caution should be used, and that the possibility of acting injuriously on the kidney should be kept in view.

We are not quite converts to Dr. Christison's argument. What he says may be very true, but it does not seem to us consistent with either analogy or probability. If a man has an inflamed eye, exposure of it to light, or exertion of it in vision is not found to be beneficial to it. If he has inflamed stomach, a hearty meal is rather apt to disagree. If muco-enteritis obtains, drastic purgatives are not quite the thing; and inflammation of the knee-joint is seldom much the better for a run or a galopade. Whichever way we turn we find that when an organ is inflamed the stimulating it to its usual actions tend to increase the excitement and the inflammation and repose is an essential item of treatment. Why a kidney in an inflammatory state, should be benefitted by being set to additional work, we are unable, on the grounds of reason, to perceive.

Dr. Christison apologises hesitatingly for mercury. On the whole he agrees with those who denounce it. Yet he owns to its employment in small doses in aiding the action of diuretics and cathartics, nay he professes that a sore mouth so produced has not seemed to him so great an evil as it has been thought by others. Our prepossessions are against mercury and we rather agree with those who are inclined to prohibit its use, than with those who resort to it, though cautiously and timidly.

When granular disorganization of the kidneys has reached the middle or advanced stage, or where it has been chronic throughout, there is little room for active treatment. Yet even in this condition, much may be done for the improvement of health, and the prolongation of life. A rather advanced state of disorganization is not incompatible with the enjoyment of tolerable health and comfort. For this end, Dr. Christison observes, a provision seems to be frequently made by a spontaneous increase in the quantity of urine; so that the daily amount of solid secretion through that channel is maintained about the natural standard. Yet such provision is not indispensable; for cases are observed where health and general comfort are preserved for a considerable length of time, although the diminished density of the urine is not compensated by any material increase in quantity.

The treatment adapted to the arrest of the progress of the disorganization or its mitigation, consists mainly in dietetic and general measures. The maintenance of the cutaneous transpiration by warm clothing, the avoidance of alternations of temperature, the occasional employment of the warm-bath, and the enforcement of regular active exercise, are the most important articles of the treatment; and next may be mentioned regularity and moderation as to food and drink, which are to be secured by a reduction of the amount of food if the patient belong to the middle ranks of life, by the selection of such articles as are both nutritive and easily digestible, probably by observing a preponderance of vegetable food, and certainly by entire abstinence from spirituous liquors as well as the sparing use of wine. Dr. Christison makes no mention of sarsaparilla. Yet we have in several instances conceived that, after inflammatory action was subdued, this, as well as several light bitters, combined with henbane, and, if the urine was acid, with soda, have proved of service.

Treatment of the Secondary Affections.

The treatment requisite for these affections, occurring as primary disorders, requires some modification in this their secondary shape. Dr. Christison

dwells on the admitted fact, that all are exceedingly apt to arise under exposure to cold, producing in all probability impaired transpiration; and consequently that in most of them advantage will be found in keeping diaphoretics as much in view as possible in the course of the treatment.

1. *Anasarca.*—When this appears in the acute form, as is usually the case when it occurs in the early stage of the disease, free blood-letting must be resorted to. The correct guides for regulating it are the state of the pulse, the local pains, the breathing, the temperature of the skin, and the general feelings of the patient. The presence of the buffy coat cannot be trusted to as an index of the propriety of further depletion; for a highly buffy state of the blood often occurs where no particular excitement prevails, or may continue after excitement is effectually subdued. When blood-letting is found necessary for acute dropsy in the advanced stage of the primary disease, it must be employed with a more sparing hand.

When the general excitement has been put down by blood-letting, or when there is not enough to require it, the choice of remedies lies between diaphoretics, diuretics, and purgatives. Dr. Christison, as has been observed, doubts the justice of the current encomia on diaphoretics. He leans on diuretics, and amongst these he singles out digitalis and cream of tartar, as the objects of his preference.

"No combination which I have tried combines both advantages in such a degree as digitalis and cream of tartar together. The former was usually given in the dose of one or two grains of the powder in the form of pill thrice a-day, or in the dose of ten, fifteen, or twenty minims of the tincture three times daily in a little distilled water of cinnamon or cassia. The cream of tartar was administered thrice a day in the quantity of a drachm and a-half or two drachms with about five ounces of water. Diuresis may generally be induced by such means in the course of three or four days, sometimes sooner,—seldom, however, if delayed beyond the seventh day. I cannot comprehend why it should be said by some that this method seldom succeeds at all in exciting diuresis. Occasionally it appears to be promoted by giving also a mercurial pill every evening for four or five days, which may be omitted soon after the flow of urine increases, in order to avoid the risk already adverted to of the constitution being extremely sensible to mercurial action. Where diuretics had been given for some time without effect, I have sometimes seen their action suddenly developed by the administration of an emetic of tartar-emetic and ipecacuan. Still more frequently have I seen it brought on in the same circumstances by a single dose of some hydragogue cathartic, such as gamboge. If all these means fail, and it should still be thought advisable to persevere with the diuretic method, the powder of squill may be tried, or infusion of broom-tops, or spirit of nitric ether, or hollands with water, or carbonate, nitrate, or acetate of potash." 150.

If the cream of tartar acts excessively as a hydragogue cathartic, that operation must be controlled by opium. The removal of the dropsy by diuresis is often slow, less so, perhaps, in the advanced than in the early stage.

Purgatives are not, at present quite so much in vogue as formerly. But Dr. Christison evinces some partiality for gamboge.

"I have often observed this particular remedy,—which it is the fashion to disregard and decry at present, because it constitutes the greater part of a much vaunted and notoriously unsafe nostrum,—to act with great force both in oc-

casioning free watery evacuations and in reducing the dropsy, yet without any particular tormina, exhaustion, or other uneasiness being occasioned, although it was administered once every two days or even daily. As to the special objections to the employment of purgatives in granular disease of the kidnies, they are clearly inadmissible where an obstinate exhausting diarrhœa is present; and I must likewise allow that I have occasionally seen them apparently succeeded by this affection." 152.

And he observes farther on:—

"Gamboge is the purgative I have most frequently employed, and generally in the dose of five grains, sometimes seven, very rarely nine. It appears of consequence to secure its being very finally divided by carefully pulverizing it with half a drachm of bitartrate of potash, otherwise it is more apt to excite griping. The rough-looking gamboge of Ceylon has seemed not less efficacious and convenient than the finest Siam varieties; and I have no doubt the one may be substituted for the other for all medicinal purposes. It should be given once every two days, except in urgent circumstances, or where a trial of it daily has shown it may be advantageously and conveniently given so often. I have occasionally employed elaterium for the same purposes and also with good effect, in the dose of a quarter of a grain. Sometimes bitartrate of potash alone acts powerfully as a hydragoge cathartic in the dropsy which accompanies granular disorganization of the kidnies. It has been already mentioned that when given in two-drachm doses, with the view of exciting a flow of urine, the bowels are sometimes acted on profusely instead of the kidnies; and this action may be induced with tolerable certainty by daily doses of half an ounce. But on the whole gamboge is the hydragogue which has appeared the most certain and most easily managed." 154.

We may remark that Dr. Christison scarcely does justice to the elaterium. English physicians give their suffrages to this powerful medicine more liberally, and, we conceive, with justice.

The anasarca may extend to such a degree as to demand punctures. There cannot be a doubt of the superiority of needle punctures over scarifications. Yet we agree with Dr. Christison in the statement that the former are not so absolutely free from danger as some, who recommended them, would wish us to believe. He has seen two fatal cases of sloughing after them, and we have met with one. A minor degree of erythema is common.

Diaphoretics should be conjoined with the purgative and diuretic plans in the treatment of anasarca; and they must be continued vigorously long after the dropsical effusion is evacuated.

The purgative plan is probably better adapted to the early than to the advanced stage of granular kidney. In the latter stage troublesome diarrhœa is much more frequent than in the former.

On the treatment of *Dyspepsia*, of *Diarrhœa*, of *Inflammation of the Serous Membranes*, and of *Catarrh*, Dr. Christison says nothing to detain us.

When *coma* occurs in the early stage of the primary disease, bloodletting, purgatives, and diuretics are the remedies. When it occurs in the advanced stage, moderate evacuations may be employed, but will probably fail.

We have now presented, we may say, the work of Dr. Christison, rather than a notice of it. We shall pursue the subject of Urinary Diseases in our next number.

Recherches Anatomiques sur l'Emphyseme Pulmonaire. Par le Dr. *Lombard*, Medecin de l'Hôpital Civil et Militaire de Geneve. 4to. Geneva, 1838, with Plates.

Anatomical Researches on Pulmonary Emphysema.

The character of Dr. Lombard, as a zealous and successful cultivator of thoracic pathology, more especially as the author of some curious researches on the nature of tubercular phthisis, is so well known, that we think it unnecessary to offer any apology for the analysis we are now about to present of a very interesting essay by that gentleman on pulmonary emphysema. The symptoms, causes, and every thing regarding the nosological history of this affection having been very recently detailed in the writings of Dr. Stokes and M. Louis, our author disclaims all intention of attempting any improvement on the opinions advanced by these writers. He professes to confine himself strictly to the anatomical history of the affection. In 1821 Magendie, in the Journal de Physiologie, T. 1, showed that the number and size of the pulmonary areolæ varied considerably with the age of the individual, so that the lung which is very dense in the infant, becomes less so in the adult, and even rarified in the aged. A memoir by MM. Hourmann and De Chambre in the Archives de Med. 1836, have further confirmed M. Magendie's views with respect to the atrophy of the lung in old persons. Dr. Lombard conceives that pulmonary emphysema is a phenomenon closely allied to this state of atrophy of the lung; only it attacks children and adults as well as, though more rarely than, old persons; and though the lungs of the latter seldom present so great a dilatation as that of emphysematous lungs, still he thinks the nature of the anatomical lesion of the pulmonary tissue the same in both. Notwithstanding the author's very modest statement that he intends to confine himself strictly to the anatomical history of this affection, he has proposed some very ingenious views accounting for the symptoms that accompany it, and the treatment he would recommend for its prevention and relief.

Before commencing his subject the author apprizes us, that under the head of *pulmonary emphysema*, he does not mean to include that which has been styled by Laennec *interlobular emphysema*, which, as it exists outside the pulmonary tissue, he conceives should not be set down as a lesion of the organ of respiration. He divides his essay into *four* sections—in the first he gives the "Anatomical Details regarding Pulmonary Emphysema."—2nd. "The Theory of the Formation of Pulmonary Emphysema."—3rd. "Explanation of the Symptoms of Pulmonary Emphysema by the nature of the Anatomical Lesion."—4th. "Practical Inferences with respect to the Treatment of Pulmonary Emphysema."

1. With respect to the *anatomical details* the author observes that, pulmonary emphysema presents itself under three very distinct forms, according to the extent of the lung affected; when the lesion is confined to some isolated vesicles, the emphysema may be called *vesicular;* when an entire lobule is affected, and this is the most frequent case, we have *lobular* emphysema; and when an entire lobe is the seat of this lesion, he distinguishes it by the

name of *lobar* emphysema. These three designations he prefers to those of general and partial emphysema as hitherto employed.

1. *Vesicular Emphysema.*—The pulmonary vesicles, when they have become emphysematous, are sometimes isolated, sometimes collected together in groups of three or four; their seat is most usually the thin edge of the lung; they are found, however, in all the parts of a lobe: situated on the internal surface of the lung, they raise the pleura, and form there small bladders somewhat resembling those of *Pemphigus.* These vesicles are really larger than they appear to be, as the portion of the vesicle contained in the pulmonary tissue is usually greater than that portion which projects externally. When these vesicles come to acquire considerable size, they result uniformly from the union of several cells, the intermediate septa of which have been broken down, and they then come under the head of our author's second division, that of emphysema occupying an entire pulmonary lobule. The cases of isolated dilatation of one vesicle, and which might result from real hypertrophy, our author thinks, must be very rare, as he has never met with a single instance of it, and as in all those cases where he has had an opportunity of dissecting a vesicle apparently simple, he always found it multiple, its internal surface presenting anfractuosities, which he found to be the vestiges of former intervesicular septa.

2. *Lobular Emphysema.*—This form is much the most frequent, it consists in the development of all the vesicles of a pulmonary lobule. By this it is not meant that all the air-cells are in the same degree of development, but only that the entire lobule participates more or less in the morbid state. The author gives figures illustrating this form of lesion, and likewise exhibiting the independence of each lobule with respect to the development of the emphysema.

The great development of an emphysematous lobule accounts for the formation of the vesicular appendices found attached to the thin edges of the lungs. The hydatiform appendices vary considerably in size, some being only a few lines in diameter, whilst others of them are several inches in circumference. By attentively examining the pedicle which unites these appendices to the lung, it will be found in some cases formed by a dense cellular tissue, containing no trace whatever of air vesicles; in other cases it will be possible to recognise in the pedicle air vesicles which are not obliterated, so that there exists a communication between the emphysematous appendix and the rest of the lung. This pedicle is sometimes a few lines in length, at other times it is so short, that the vesicle seems to be attached immediately to the lung. The appendix itself is formed by a simple or multiple cavity; the latter case is by much the most frequent. In the hydatiform appendices, he tells us, all the varieties of emphysema are found, from the unequal dilatation of some cells to the destruction and fusion of all the vesicles into one, the parieties of which are anfractuous and traversed by thin transparent filaments.

The cavities of the emphysematous lobules present all the degrees of development, from the fractions of a line to one or two inches in diameter. When carefully examined, these cavities, far from being simple and regular,

are always multiple and anfractuous; they often acquire also considerable size. These different appearances the author illustrates by figures.

When in an emphysematous lobule there is but a certain number of cells increased in size, it is, as our author observes, the most superficial that are so, and in general the lesion is so much the more marked, as we pass from the centre to the circumference. Our author does not recollect ever having met with a lobule emphysematous in the centre, and normal at the edges of the lung. Why the development of the most superficial vesicles is easier and greater than that of the central cells, he accounts for in this way: because at the surface of the lung there is only the pleura to oppose the extension of the pulmonary tissue, which, being a serous membrane, is very extensible, whilst such is not the case with the tissues situate at the centre of the lung.

3. *Lobar Emphysema.*—When the Emphysema extends to an entire lobe, it presents two very distinct varieties: in the first, all the lobules are emphysematous, but in very different degrees; this is the most ordinary case. The second form of lobar emphysema is that which has transformed the entire tissue of a lobe or even of a lung into a spongy body, so large that one might think it to be hypertrophy; but the increase in size depends not on an addition to, but rather on atrophy of, the areolar tissue, which, having lost its elasticity, allows itself to be distended by the inspired air. This form of lobar emphysema is that which approaches nearest to the normal state of the lung of old persons.

With respect to the first variety, which is the product of the union of several emphysematous lobules, the description already given of lobular emphysema will apply. In regard to the uniform dilatation of an entire lobe, our author states that this form presents different circumstances which it is important to notice. In the first place the vesicles, though apparently uniform in figure and size, are far from having all of them the same dimensions; some are three or four times their normal size, whilst others are scarcely at all augmented in size; in certain portions of the lung distinct anfractuosities are found, whilst in other parts the tissues present no very apparent solution of continuity. A second circumstance observed in lobar emphysema is the obliteration of the blood-vessels, or at least their diminution in number and in size: the pulmonary tissue in the normal state is of a deep red colour, and traversed in every direction by numerous capillaries, whilst in the emphysematous state we have an areolar tissue, white and almost completely bloodless. Again, a third character of this form of lobar emphysema consists in the destruction, or at least in the fusion, of the cellular tissue which separates the lobules in the normal state, which makes the lung appear uniform and without intersection through the entire extent of a lobe.

II. Theory of the Formation of Pulmonary Emphysema.

Our author, after describing the different forms of pulmonary emphysema next proceeds to consider this disease in itself, and to investigate the state of the pulmonary tissue which constitutes emphysema. The great development of the air vesicles must be owing either to hypertrophy, or to the union of several cells isolated in the normal state, but united into one cavity by

the destruction of the intermediate parietes. Laennec and Andral recognise both these origins of pulmonary emphysema, whilst M. Louis considers hypertrophy as the most ordinary state of emphysematous lung.

"If," says our author, "we examine with the microscope a piece of emphysematous lung previously dried, we shall find, at first sight, that the increase in the size of the lung is not owing to the thickening of the tissue of this organ, and that far from finding a dense and resisting tissue, as it should be if it were hypertrophied, we find, on the contrary, a porous, light tissue, the intersections of which are either destroyed or so attenuated as to become transparent."

The attenuated and transparent state of the intervesicular parietes of an emphysematous lung would give rise to the idea of a very extensive obliteration in the blood-vessels; but theory could reveal only a part of the modifications which the pulmonary tissue has undergone in this respect. Observation shows that obliteration of almost all the blood-vessels is the essential character of pulmonary emphysema. The tissues lose their thickness, their colour, and their elasticity, they become thin and transparent in consequence of the destruction of the blood-vessels, which, in the healthy state, ran through them in all directions, and formed of them a real erectile tissue.

Thus direct observation leads our author to recognise in pulmonary emphysema two anatomical circumstances essential to its existence: 1st, the destruction of a considerable part of the intervesicular parietes, and the union into one anfractuous cavity of a greater or less number of air-cells originally separated; 2nd, the obliteration of almost all the capillaries in the emphysematous portions of the lung. So that in order to trace the anatomical history of pulmonary emphysema all that now remains is to discover the relations which connect these two facts, and more especially to investigate whether they are to be considered in the light of cause and effect, by ascertaining whether one of them has necessarily preceded the other.

In investigating these points our author observes that, if destruction of the intervesicular parietes had preceded the obliteration of the blood-vessels, hæmoptysis should be one of the most constant symptoms of the commencement of pulmonary emphysema; and yet out of thirty-five cases under M. Louis' care, only one had hæmoptysis, and this individual at a subsequent period presented evident symptoms of tubercles; from which it may be inferred that hæmoptysis is not one of the symptoms of emphysema, as should be the case if obliteration of the blood-vessels had not preceded the destruction of the tissues traversed by them. "And let it not be said," says our author, "that in emphysema the portion of the pulmonary tissue destroyed contains only blood-vessels too small to give rise to any perceptible hæmorrhage, as we see entire lobules transformed into a pouch of three or four inches in circumference, the cavity of which is large enough to contain a nut and always remains open." Thus then obliteration of the blood-vessels must be considered as the first degree of the formation of pulmonary emphysema. The author now endeavours to show how the destruction of the intervesicular parietes is the natural consequence of this occurrence. It is of constant observation in pathology that when an organ is rendered useless, it becomes atrophied and ultimately disappears. This is what happens to the pulmonary tissue when it is no longer traversed by the capillary blood-

vessels, the parietes of the vesicles become attenuated and at length disappear, the result of which is the formation of the anfractuous cavities which constitute pulmonary emphysema. These attenuated and atrophied membranes are then observed to lose their elasticity, and become incapable of expelling the air which remains in them during expiration; thence arises a new series of phenomena which has led some anatomists to consider emphysema as an atrophy of the pulmonary tissue.

The air which penetrates a healthy lung is driven out during each expiration by virtue of the elasticity of the pulmonary tissue. In an emphysematous lung the air enters irregular, anfractuous cavities, the parietes of which have no longer strength to expel it; hence arise two important phenomena; the first is the state of permanent tumefaction of an emphysematous lung; the weight of the atmosphere, which, in the healthy state, when the sternum is raised, is sufficient to press down the lung, is insufficient to expel the air imprisoned in a lobule or an emphysematous lobe; thence comes an increase of size which is more apparent than real, and which gives to the lung thus changed the appearance of a tissue inflated with some force, and which occupies a much greater extent than in the normal state. The air which fills the air vesicles renders it more difficult to tear, for the same reason that a healthy and crepitating lung is more resistant under pressure than an engorged or hepatised lung. There is then in an emphysematous lung an apparent increase of size, but which no more depends on hypertrophy of tissue than the temporary erection of the nipple or of the penis.

In the next place, besides the phenomena just mentioned, and the object of which is principally lobar emphysema, there is another observed in the emphysematous lobules, when the latter, instead of retaining their primary form, protrude through the lung, and really increase in size; but there is not, in this case, a real hypertrophy, since the pulmonary tissue so far from being no more dense or solid, is, on the contrary, distended beyond measure, and almost completely destroyed. This increase of size is probably owing to the expansion of air imprisoned in a tissue whose temperature is much higher than that of the atmosphere; but further, the normal development of an emphysematous lobule is particularly favoured by the diminished elasticity of the tissues, which are no longer traversed in all directions by numerous venous and arterial capillaries. The efforts of coughing might be supposed to perform an important part in this phenomena; but the history of the symptoms contradicts this opinion, since in one fourth of the patients observed by M. Louis, the cough which might have occasioned the destruction of the air-cells, did not commence till after the dyspnœa, and when the emphysema might be considered as already formed.

III. Explanation of the Symptoms of Pulmonary Emphysema by the Nature of the Anatomical Lesion.

If the different facts contained in these anatomical researches be now recapitulated, it will be seen that pulmonary emphysema is a morbid state of the lung which commences by the obliteration of the capillary blood-vessels, and which, at a later period, destroys the air-cells, and changes them into vast membranous and irregular cavities, so that one is led to consider pul-

monary emphysema as *a partial destruction of the organ of respiration*, a destruction which renders the lung completely useless for the functions of hæmatosis. Pulmonary emphysema, far from being an hypertrophy, is then a real atrophy, and this opinion is so well founded on facts, that in an emphysematous lung, we find, besides the tumefied lobules, the vestiges of other lobules, which have completely disappeared from atrophy of the tissues. Such is the opinion which our author has arrived at by direct observation of emphysematous lungs; he next endeavours to trace the relations which connect pulmonary emphysema with the symptoms observed in persons whose lungs have undergone this degeneration.

The symptoms of emphysema may be divided into two classes: the first class comprising those which are the immediate consequence of the prolonged sojourn of air in the lung; the other, though connected probably with the circumstance, are not the direct result of insufficiency of respiration.

With the first class are connected sonorousness of the chest, the absence of the respiratory murmur, the abnormal development of the thoracic parietes, and debility of the muscles of inspiration noticed by Dr. Stokes as the consequence of the forced extension in which they are kept by the morbid development of the lungs.

In the second class may be reckoned dyspnœa, frequency of pulmonary catarrhs and cough, which is the consequence of the latter, palpitations, hypertrophy of the heart, and œdema of the lower extremities.

On comparing these two classes of symptoms with the anatomical state of the lung as already described in this article, it will be found how easy it is to account for the production of the different symptoms now enumerated. It has been shown that emphysematous lungs are transformed into irregular cavities circumscribed by a thin, membranous tissue, which has lost the elasticity necessary to drive out the air conveyed to them by inspiration; besides, this air being heated by its sojourn in a body whose temperature is very high, acquires a much greater size. From these two physical facts result all the symptoms of the first class: the sonorousness of the chest, a considerable quantity of air remaining confined in the lung; the abnormal development of the chest, it being a matter of constant observation that the parietes of the cavities are moulded on their contents, and that if the lung keeps itself permanently in a state of forced distention, the corresponding portion of the chest must become developed in the same proportion. The absence of the respiratory murmur is the natural consequence of the fulness of the lung, which being already distended beyond measure by the atmospheric air, can no longer receive any at each inspiration. The weakness of the inspiratory murmur appears also to be connected with debility of the inspiratory muscles. There is not then any one of the symptoms of the first class which is not satisfactorily explained by the morbid state of the emphysematous lung. Those of the second class are also an evident consequence of it, though less directly than the preceding; for they result, some from the obstruction occasioned to the circulation by the obliteration of the greater part of the capillaries of the lung, and by the forced distention of the lung; this will account for the palpitations, hypertrophy of the heart, and the anasarca which is the consequence of it; the others arise from the obstacle caused to the respiration by the state of permanent development

in which the lung is kept in emphysema; in this way our author accounts for the dyspnœa, cough, and pulmonary catarrhs so frequent in emphysematous patients; the latter symptoms may also, he conceives, be the result of the increased activity of the healthy parts of the lung in persons in whom an entire lobe, and oftentimes an entire lung, has become completely useless for the function of hæmatosis.

IV. Practical Consequences respecting the Treatment of Pulmonary Emphysema.

Our author now applies the preceding remarks to the treatment of pulmonary emphysema. Those who consider this disease hypertrophy by passive dilatation of the vesicles, endeavour to restore tone to the bronchial muscles and for this purpose they recommend strychnine; this medicine however can evidently be of no use to re-establish the septa of the vesicles which have disappeared; probably however it might be employed to restore a little tone to the thoracic muscles from its marked and striking influence on the spinal cord, and consequently on the nerves which it sends to the respiratory muscles. The author never tried this mode of treating the disease. Louis employs opium, which possesses decidedly beneficial properties with respect to diminishing the difficulty of breathing in emphysematous patients. Dr. Lombard supposes that it may produce this effect by diminishing the physical want of respiration, and consequently by putting a stop to that state of spasm in which the anxiety of the patient keeps all the respiratory muscles. Laennec used to recommend polygala, oxymel of squill, &c. in order to diminish the dyspnœa in ephysematous subjects: the only effects however such medicines could have is to diminish the viscidity of the sputa; it is obvious that none of these means could exercise any influence on the lesion which constitutes pulmonary emphysema.

A rational treatment, according to our author, of this disease, should, in the first place, modify the pulmonary circulation so as to prevent the obliteration of the capillary blood-vessels, and, in the next place, render the expiration more complete. Of these two indications the first is much the most difficult to be fulfilled, inasmuch as it is evident that the phenomenon it would combat is enveloped in the utmost obscurity; however, observes our author, going on the fact that obliteration of the capillaries is the natural consequence of their diminished activity, it is readily understood that if it was possible to foresee the formation of pulmonary emphysema, it would be necessary to combat this disposition of the blood-vessels to become obliterated by all those means which should increase the movement of the blood through the lung; a sharp and bracing air should be recommended to the patient; exercise continued for a long time, and so conducted as to render the respiration more complete; in a word, the tonic and strengthening treatment would be the best adapted for the first period of emphysema, and might be successively employed in young persons whom either an hereditary predisposition or attacks of dyspnœa seemed to threaten with this disease.

The second indication, that which consists in driving out the air confined in the lung, might be fulfilled by all those means capable of rendering the respiration more complete, and above all the expiration more easy. Such

are gymnastic exercises, riding on horseback, and all those exercises which tend to strengthen the muscles of the trunk. Strengthening douches on the thoracic parietes, sea bathing and stimulating frictions on the chest, might be employed in the same cases. Probably also the strychnine recommeded by others for a very different reason, however, might fulfil the indication now in question by rendering the contractions of the diaphragm and of the intercostal muscles more complete and more energetic. Pulmonary catarrh and hypertrophy of the heart, when consequences of emphysema, are to be treated in precisely the same way as in one who is not emphysematous.

In conclusion, the author acknowledges that, with respect to the tonic treatment here recommended and to which he was led by the theoretical views which he has given of this affection, it has not yet received the sanction of experience, without which no method of treatment can be recommended with anything like confidence, practical medicine being one of those objects in the circle of the sciences to which unfortunately *à priori* reasoning is but little applicable.

AN EXPOSITION OF QUACKERY AND IMPOSTURE IN MEDICINE, &c. By Dr. *Ticknor*, with notes by *W. Wright*, Surgeon-Aurist. S. Hodson, Fleet-street.

"QUACKERY and imposture" will continue in medicine, so long as there are people to be gulled, and lucre obtained by gulling. This "we calculate" will be for ever. Is quackery or imposture confined to physic? No verily. It has existed in every profession and trade from the very origin of arts, and is only now more extensive than hitherto, because *Arts* are more numerous and general. Was smuggling ever put down by penal enactments? Never. It can only be annihilated by rendering the trade unprofitable—by taking off the duties. Can quackery and imposture ever be rendered unprofitable in physic, or in any profession? We think not. It exists and has always existed even in religion. The priests were quacks and impostors from the earliest ages, when they pretended to have influence on the skies, and to even hold the keys of Heaven. Have we not plenty of quacks and impostors in religion at this very day! How often is the mask of sanctity worn by the hypocrite for the purpose of obtaining his own selfish ends? Do not the lawyers *impose* on their credulous clients and urge them to suits where the lawyer only is the winner Is there a single lawsuit in which one party is not deceived by the opinions of their legal advisers? But their is not a single art, profession, or science into which "quackery and imposture, do not force their way—and medicine cannot expect to escape. This science, if indeed it be one, is more open to quackery and imposture than any other. One half of our practice is guess-work, and in matters of such uncertainty the ignorant will have his guess, and assert that he knows more than his neighbours. But then there are *unqualified* men who practice physic without a diploma—and consequently are quacks. This is a very small portion of the evils of quackery and imposture in medicine! The mass of trickery and

humbug in medicine—and legalized too—is to *unlicensed* practice as the Atlantic ocean to the lake of Keswick. What is the unbounded practice of detraction but quackery and imposture! A medical man is shewn the prescription of another medical man, and, as a matter of course, pronounces it to be totally inappropriate to the case, significantly hinting his astonishment that the patient is alive to tell his tale! Is this practice frequent? More frequent, we believe, than unlicensed practice—and it is more disgraceful—more unchristian—and more detrimental (si sua bona norint) in the end to the medical profession. Many, we have no doubt, commence this *mala praxis* from necessity, and continue it from *habit*, without sinister intentions—as liars at last believe their own falsehoods, so often repeated.

The object of the work before us is to "overthrow quackery in medicine, by exposing its errors, &c." Good intentions, no doubt, but quite impracticable. Dr. Ticknor tells us that—

"It is neither the ignorant nor the superstitious alone who are gulled by the designing; for in this country such individuals are rarely to be found—and yet there are plenty of subjects upon whom these harpies prey." 6.

Thus then amongst the learned and intelligent, in the United States, as indeed in this country, the quack finds his ready customer! And what is the remedy proposed by our author? A general study of medicine by the community. The thing is impossible—and if it could be put into execution, the mischief would be incalculable. The smattering of medical science which could possibly be attained by the masses, would only render one half of them hypochondriacs—and consequently the prey of charlatans. Even medical men themselves are far more frightened by their own ailments than are the most ignorant of their patients. But how would it be possible for one in one thousand of the community, to acquire even a smattering of anatomy, chemistry, *practice* of medicine, &c. The thing is as Utopian as any scheme ever propounded to the world.

The greater portion of the work consists of a slight popular delineation of health, disease, and remedies—interlarded, however, with a great many anecdotes of quackery and its victims. These are, of course, the only portions of the book than can claim any notice from the medical reader—and, to say the truth, they are the portions of the work which will do most good to the community—by drawing their attention to the iniquities of empiricism—and the gullibility of its customers. We shall cull a few samples from these anecdotes.

"An empiric of the first water, not many years ago, had made himself famous for the cure of all human maladies, by the administration of peculiarly large pills of his own invention. What contributed not a little to the increase and spread of his reputation was the fact, that he used frequently to tell his patients, that from their symptoms he was confident some particular substances were lodged in a portion of the alimentary canal. At one time he would tell a patient that he had apple seeds retained in his bowels; and again he would tell another, that he had kernels of different fruits, and grains, in his stomach, and if by questioning gentlemen he could ascertain that they were fond of shooting, it was not seldom that he attributed their complaints to having accidentally swallowed a few shot. As nothing could so conclusively prove his prognostics correct, as the simple fact of finding the articles named, so the old gentleman's character for wisdom and skill became more and more firmly established; for the identical causes of

mischief were invariably discovered after taking a dose of the 'big pills.' At length, a lady of the first respectability, having suffered a long time from deranged digestion, applied to the celebrated doctor for assistance. After a few questions, he told her very promptly that he understood her complaint, that he knew what ailed her, and more than all, that her doctor was a fool, and assured her that his big pills would effect a cure. Neither of these assertions she exactly credited, but nevertheless, concluded, to try his remedy if he would make known to her the complaint. 'Why,' says he, 'you have got lemon seeds in you—you must take some of my big pills and get rid of them, and you'll be perfectly well again.' 'Why, Doctor,' said the lady in amazement, 'I have not eaten a lemon for six years; and what you say is altogether impossible.'

'No matter, madam, if you have not eaten a lemon for twenty years, the fact is just as I tell you, and if you will take the pills you can be satisfied of it.'

The pills were taken, and to the utter astonishment of the patient, the lemon seeds were found; a second dose was taken and still more seeds made their appearance. A thought now flashed upon the lady's mind. One pill was yet left which she examined, and behold! *a lemon seed* in its centre—the secret, truly, of the Doctor's astonishing wisdom, and successful practice." 49.

This was no bad trick of the transatlantic charlatan, and we should not be at all surprized to find the hint taken by some cisatlantic worthies of the same class.

2. It appears that the lobelia inflata is working its mischiefs on both sides of the Western Ocean. We observe, almost every day, in this Metropolis, the injuries occasioned by the administration of the tincture, in what are called asthmas, but which are, in reality, neither more nor less than bronchial inflammations. In such cases, as might be expected, the irritating tincture of lobelia inflata does much harm.

"A melancholy instance of death occasioned by the use of this plant in the hands of a quack, is detailed in the sixth volume of the Massachusetts Reports in the trial of Samuel Thompson, an empiric, practising in Beverly, for the murder of Ezra Lovett. In this trial, it appeared that the patient, being confined by a cold, sent for the pretended physician, who gave him three powders of lobelia in the course of half an hour, each of which vomited him violently, and left him in a great perspiration during the night. The next day two more powders were administered, each of which operated by vomiting, and occasioned great distress. In like manner two other powders were given the subsequent day, leaving the patient in a state of great prostration. Several days after this the physician (!) came again, and finding his patient still worse, administered several more powders, which occasioned great distress, and at length ceased to operate. Finding that the stomach was not sensible to the emetic effect of the lobelia, the physician (!) repeated the dose, and when the patient complained of great distress at the breast, and said he was dying, the doctor (!) assured him the medicine would soon get down, or operate as a cathartic. However, on the same evening, the patient lost his reason, and became convulsed, so that two men were required to hold him. To relieve which, the doctor forced down two more of his powders, and the patient, as was expected, grew worse, and continued so until he expired.

"The doctor, who had thus terminated the disease and the patient at once, was arrested and put upon trial for murder. But the homicide proving a legitimate one, from the want of a sufficient evidence of malice prepense, he was acquitted and set at liberty.'" 56.

This was what the lawyers would call "sharp practice"—even for brother Jonathan!

On the shores of liberty and equality they have a new species of physicians —"*the Steam Doctors.*" These are not steam-boat doctors—but itinerant medici who go about the country with portable vapour-baths, curing all diseases by steam and cayenne pepper! These doctors compress the whole circle of medical science into a duodecimo volume,—the direction for steaming, and with this pandect each one sallies forth, like a Knight errant, to relieve all damsels, distressed widows, and sick children.

"Like a harpy, he scents his prey at a distance; and wherever he can hear of a sick person, no matter whether he is attended by a physician or not, thither he directs his course; and by impudence, promises of a certain cure, and denunciations of 'apothecary doctors,' attempts to impose upon the patient, and his friends, his homicidal quackery. This is not all, for sometimes he is successful in perpetrating his practice upon the credulous; and happy is the patient who lives to boast of his recovery.

A steaming quack, of a stamp like the one above described, made an effort to introduce the steam and red pepper practice into the family of his friend, who had four children lying sick with scarlet fever, of a most inflammatory character." 70.

With one more extract we shall conclude. It may be perused with advantage by those who raise a cry in this country in favour of cheap medical education—and against long courses of study, with their attendant expenses.

"It is the peculiar excellence of our government, and our pride and boast, that all who live under it are equal, in point of privilege, and in respect to person. 'Liberty and equality,' 'democracy and republicanism, are the watch-words of the day, and on these foundations, thank Heaven, our institutions are reared; but there is a limit beyond which liberty degenerates into licentiousness and when democracy is but another name for the rule, or rather misrule, of the rabble. It is not patriotism, or love to our fellow-men which would confer the same privileges on the learned and on the ignorant—on the virtuous and on the vicious—it is not republicanism which would lower the standard of the professions, and open the portals of science for all to enter, whether qualified or not. Instead of lengthening the term of study or requiring more qualifications of a candidate for graduation, a cry of 'aristocracy' is at once raised—the poor cry, 'persecution;' they conceive their rights invaded, and an effort is made to produce a generation of doctors, of a character inferior to all their predecessors.

It is a fact that wealth always does, and ever will confer power; in commerce, agriculture, manufactures, trade and speculation, capital is necessary. Those who have it not find no fault with those who possess it, because they see that none of these operations can be carried on without it. But, talk of matters of science, and the necessity of capital—of the expenditure of time and money to aid in its acquisitions—and the cry is, by those in and out of the profession, 'that will never do, it costs too much already to learn to be a doctor; you must bring the professions within our reach; let the man of three years' superficial reading enjoy all the honours and privileges of one who has devoted ten times the amount of labour to the same object; you must, in fact, degrade science to suit our circumstances, and our convenience'—this is pure 'democracy,' this is 'equality and republicanism.'" 232.

We wish rather than hope that Dr. Ticknor's volume may achieve the object for which it was written—the annihilation of quackery. If it perform this task, it will outstrip any of the labours of Hercules—or all twelve put

together. And when it suppresses all *unlicensed* quacks, the Doctor will have plenty of *unqualified* practitioners to sweep from society—and even when all are brought up in learning, to high-water mark, his labours are only beginning: he will then have the unbounded field of *legitimate* quackery and imposture to weed. He will have the homœopathic humbugs—the monomaniac magnetisers—the lung-stretching "consumption-curers"—and ten thousand other heads of the hydra of quackery to combat—in which contest the worthy Doctor will be beaten out of the field, and laughed at for his pains.

OUTLINES OF MILITARY SURGERY. By Sir *George Ballingall*, M.D. F.R.S. &c. Regius Professor of Military Surgery in the University of Edinburgh. Second Edition. Longman and Co. pp. 538.

How much the science of medicine owes to the labours and the contributions of naval and military surgeons would form neither an uninteresting nor unfruitful inquiry. More we are inclined to believe might be traced to these sources than is generally yielded to them. From the days of Paré, whose name would have been immortalised in the annals of the healing art, by one improvement had he done nothing more—the invention or revival—and how nearly synonymous these terms become—of the ligature of arteries in amputations and wounds:—from Paré down to the distinguished surgeons both Foreign and English of the last war, how numerous and how valuable the improvements, modifications, and discoveries which they have bequeathed, not to all succeeding military and naval surgeons only—but to medical science in its largest limits.

By tracing the progress of the healing art during the last two hundred years, this might be easily demonstrated and the names of surgeons of both services attached to those epochs in surgery, formed not by time, but by the improvements and advances which have most contributed to place the science in the rank it holds at present. It will, however, be more useful perhaps to show upon what these good results, which cannot be seriously disputed depend, and how far governments, and more particularly our own, have adopted the measures best calculated to draw the utmost fruit from such valuable sources. Although a long peace, which fortunately all countries have rather sought to maintain than disturb, has rendered such a subject less immediately interesting—yet it is in peace that we should prepare for war, and the elements of discord in the political atmosphere of the present day are sufficiently rife to lead us into war at no distant period, in spite of our debt which is real—or the amity of France and the United States—or the neutrality of Russia—all of which seem more or less apocryphal.

The slightest inquiry into the causes of the many and valuable improvements and contributions to science derived from the medical officers of armies and navies, leads us at once to the circumstances on which they depend and the chief of these is well laid down in a single paragraph.

"It is not, however, in a combination of the two great branches of the profession that the essence of Military Surgery consists, so much as in the peculiarity of the circumstances in which they fall to be exercised; and it is not perhaps more in the surgical than in the medical division of the subject that its peculiarity exists. Military Surgery may be considered as a judicious application of all the subdivisions of the healing art to those varied circumstances in which soldiers are placed both in health and in sickness. 'Ce n'est pas toutefois une science distincte, ni même une branche particulière de l'art de guérir, mais une application raisonnée de toutes les parties de cet art aux circonstances variées dans lesquelles se trouvent les hommes de guerre, tant en santé quen maladie.'" 2.

The necessity for ample knowledge and the daily experience in all the branches of the healing art have a constant tendency to enlarge the scope of the surgeon's observations, and above all, to prevent narrow or contracted views of diseased actions and their remedies. The division of labour and distinctions into classes which obtain in cities, may have some good results in *practice*, but unfortunately these distinctions which ought only to commence there, sometimes are observable ab ovo—exercising a most pernicious influence through the student's education, where he has decided from the beginning that he will be a physician, a surgeon, an accoucheur, or an oculist only, leading to the acquirement of a partial and very imperfect knowledge of the science generally, which becomes daily more contracted by the limited class of cases to which the attention is confined.

In this we hold the medical officers of the public service have at all times been placed in circumstances conferring great and important advantages.

A second class of advantages, not less notable, consists in the extensive nature of the experience acquired—thus

"All arts, trades and professions, expose those who practise them to different diseases, the number, nature, and severity of which vary, according to the influences, more or less hurtful, to which individuals are subjected, and according to the kind of life which, by custom or necessity, they are compelled to lead. While many of the exercises and habits of soldiers are undoubtedly of an invigorating and salutary description, there is no class of men exposed to more numerous or more fertile sources of disease, in the frequent, sudden and unexpected changes of climate to which they are subjected,—in the urgent and unseasonable calls of duty which they must not disobey,—in the privation of food, of shelter and of every comfort to which they must occasionally submit; and in the thoughtless excesses of every kind in which they are too prone to indulge. If to the study of all these causes, and their effects upon the human frame, we add the consideration of those complicated wounds which it is their peculiar lot to receive, we shall find abundant occupation for the exercise of all the talent and industry which the most active and assiduous professional men can bring to bear upon the subject of military medicine and surgery. 'All those who have practised medicine in armies have observed, that the practice of it there presents difficulties which are very remarkable, whether on account of the nature and severity of the affections which attack soldiers, on account of the complicated forms in which those affections are met with in camps and in hospitals, or on account of numerous obstacles and interruptions, to the usual and approved modes of treatment in civil life. Hence it is that, independent of the theoretical and practical knowledge necessary for every physician, he who is destined for the service of the army ought to have accurate and precise information with regard to the condition of the soldier, his manner of life, his habits, his duties, his exercises, the numerous causes of disease which beset him, and the ex-

traordinary circumstances in which he is placed, particularly in the time of war.'"

Without following the subject further, this glance will be sufficient to show the great advantages constantly attendant on military practice. The arguments quoted are brought forward by Sir George, not to prove the position we have chosen, but the necessity for previous instruction in military surgery, and the establishment of schools or lectures for that purpose, not only in Edinburgh but in London and Dublin, for the due preparation of those who devote themselves to either service. When we remember the class of youths of 17 and 18, half educated and totally ignorant of all circumstances connected with the diseases and accidents of soldiers and sailors, who filled the junior ranks in both services during the late war, it cannot but appear highly desirable that some efficient measures should be taken, to insure at any time the proper, and in some degree particular, instruction, required to enable a surgeon to perform all his duties efficiently in either service.

At the present moment such is the overplus of candidates for professional employment, that doubtless, were there a war now, the first or second year's levies and operations might be readily and abundantly supplied with fairly educated young men, but even these would be totally unprepared for the thousand exigencies and peculiarities of service whether by sea or land —and after that period our armies and our fleet would be in much the same condition as they were 40 or 50 years ago!

The position of the junior medical officers in both services, and more particularly in the navy, is not such as to offer any inducement to well-educated men, who have any prospects, however mediocre, in civil life.

Much has been effected since the beginning of the last war—the great injustice of the then existing regulations and that which has more weight with governments—the inevitable and lamentable consequences of treating those to whom the lives and limbs of their soldiers or sailors were confided, with scanty remuneration, and less consideration, became so evident, that gradual and important ameliorations have since that period been effected. Much, however, is yet to be done in the English service before the medical officers are placed in the position to which their education, zeal, and the nature of their services have ever entitled them—and let us add, before the same inducements which are held out to their brother officers, for the highest exertion and the cheerful devotion of their energies under any accumulation of trying and perilous circumstances, shall have also been afforded to the medical staff. Perhaps have governments, not less than generals, been but imperfectly aware, of how much the success of their armies, on which they lavish millions of money, and of their generals, on whom dukedoms, stars, and wealth are showered, depends upon their sick list—upon the sanitory state of their armies—and these upon the efficiency and devotion of the medical officers. Perhaps too both the English government and the commanders of its fleets and armies, finding that their regulations, however unjust, or their modes of remuneration however scanty and relatively unfair, were still responded to by a general efficiency and many examples of high talent and devoted zeal, have formed their opinions from these results of a high feeling of that which medical officers felt they owed to themselves and their country,—and thus rested content midway. Be this as it may, much is yet to be done before the medical officers of the public services of Great

Britain are even placed in the same position as those of many other countries. And even those where they are most favourably placed, it may be questioned whether all has been done which justice and the best interests of governments demand.

As Sir George himself remarks—

"Military Surgery, as it now exists, is so essentially the creation of the late war, its principles have been so fully developed, and its future practice must be so much influenced by the experience acquired in the recent campaigns, that to this experience I must chiefly refer in laying down the rules of treatment applicable to those formidable diseases which assail our fleets and our armies, and to those severe and complicated injuries which it is the lot of the soldier and the seaman to sustain." 6.

Much novel or original matter is not therefore to be looked for—the object of the work being rather to give a clear and succinct account of the various circumstances of military service—the diseases and injuries of soldiers as they had been ascertained and described at the close of the last war, with such plain and straightforward instructions as may be best calculated to fit a young surgeon for his military duties. It would be fruitless, therefore, to follow the author through his various chapters on gun-shot wounds, amputations, &c. We may observe, however, that in this second edition Sir George has given ample evidence of having carefully selected any original or valuable information which such additional experience as the few partial storms of European politics have furnished—Navarino—Antwerp—and the wars of succession in Portugal and Spain.

The sections devoted to the diseases of camps and garrisons of troops on foreign stations and the proportion of sick and wounded in armies, embrace subjects of interest at every time, and well merit consideration.

The medical statistics of armies have never yet been cultivated so as to give the varied and valuable information which they are well capable of doing under a better system. How important are the considerations and results involved in this subject, is well pointed out when quoting Sir James M'Grigor. The author shows—

"During the ten months from the siege of Burgos to the battle of Vittoria, inclusive, the total number of sick and wounded which passed through the hospitals was ninety-five thousand three hundred and forty-eight. By the unremitting exertions of Sir James M'Grigor and the medical staff under his orders, the army took the field preparatory to the battle with a sick-list under five thousand. For twenty successive days it marched towards the enemy, and in less than one month after it had defeated him, mustered within thirty men as strong as before the action,—and this too without reinforcements from England, the ranks having been recruited by convalescents." 62.

"But it is in the navy, even more than in the army, that the effects of prophylactic measures, both medical and military, have had the most conspicuous influence in diminishing sickness and mortality."

"A long sea voyage was formerly considered one of the most unhealthy situations to which a man could be exposed, while by the institution and enforcement of prophylactic measures a ship's company may now be conducted round the world, exposed to every vicissitude of temperature, and to all the hardships and dangers of the sea, with a smaller proportional loss of men than would happen in almost any other given situation." 63.

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"But it is in the navy, even more than in the army, that the effects of prophylactic measures, both medical and military, have had the most conspicuous influence in diminishing sickness and mortality."

"A long sea voyage was formerly considered one of the most unhealthy situations to which a man could be exposed, while by the institution and enforcement of prophylactic measures a ship's company may now be conducted round the world, exposed to every vicissitude of temperature, and to all the hardships and dangers of the sea, with a smaller proportional loss of men than would happen in almost any other given situation." 63.

"It would appear that this practice of indiscriminate dilatation is not yet abandoned by the French surgeons, for Mr. Alcock in a letter to me, states, that upon a very recent occasion, after the assault of Irun, a military ambulance was dispatched from Bayonne with offers of assistance to the wounded; and that all the Spanish who fell into their hands were unmercifully estrellated by the French bistoury. To this general rule there is, however, at least one creditable exception. M. Baudens, chief surgeon to the French troops serving at Algiers, seems to have had his eyes opened to the mischievous effects of this exclusive rule; and his conversion seems to me a point of much interest and importance." 216.

We may remark, *en passant*, that we were struck by the poverty of the leçons given by Dupuytren, on the gun shot wounds resulting from the days of July, 1830, the first time the printed account of them met our eyes. They seem to be a pas en arrière to Larrey, instead of being, as was naturally to be expected, something in advance.

The *torsion* of arteries, now nearly totally relinquished, seems to have been extensively tried within the last few years.

"Torsion has been said to act less certainly on the smaller than on larger-sized arteries, and hence, perhaps, the little progress it has made in this country. Mr. Alcock tells me that torsion was tried in fourteen consecutive amputations, at Oporto, including one at the shoulder joint, and that secondary hæmorrhage occurred only in one of them." 231.

As an outline of lectures forming a clear and tolerably concise digest of the principal subjects within the scope of military surgery, and of most importance to the young surgeon about to enter on such a career, it is an excellent work, and much care and labour in condensing old matter and adding new, has evidently been bestowed upon this edition, with great advantage to the reader.

ON THE FUNCTIONS AND DISEASES OF THE EAR.

I. THE CYCLOPÆDIA OF ANATOMY AND PHYSIOLOGY. Edited by *Robert B. Todd*, M.D. F.R.S. &c. &c. Part XV. London, January, 1839. Price five shillings.

II. A TREATISE ON THE STRUCTURE, ECONOMY, AND DISEASES OF THE EAR; BEING THE ESSAY FOR WHICH THE FOTHERGILLIAN GOLD MEDAL WAS AWARDED BY THE MEDICAL SOCIETY OF LONDON. By *George Pilcher*, Lecturer on Anatomy and Surgery at the Theatre of Anatomy and Medicine, Webb-street, Borough; and Senior Surgeon to the Surrey Dispensary. London, 1838, pp. 324.

I. THE FUNCTIONS OF THE EAR.

THE appearance of the present Part of the Cyclopædia of Anatomy has been materially delayed, but the editor promises the publication of the next part in a month, and the completion of the work as early as possible. The best

way, we fancy, for the public to get the work rapidly concluded, is to patronize it.

The Part before us contains—

Hearing, Organ of, concluded, by T. Wharton Jones, Esq.

Hearing, by Dr. Todd.

Heart, Normal Anatomy, by Dr. J. Reid.

Heart, on the Arrangement of the Fibres of the, by H. Searle, Esq.

Heart, Abnormal Anatomy, by Dr. Todd.

Heat, Animal, by Dr. Edwards.

We can speak in very favourable terms of the execution of all the articles. The work is really a very valuable one, and deserves encouragement from the scientific part of the profession—more than, we fear, it gets. Yet other works of inferior merit, have received more. If individuals cannot afford to purchase it, all medical libraries and book societies should have it.

We shall select the article Hearing, by Dr. Todd, for an analytical notice. We do so, not because it is better than the others, but because the majority of medical men know little of the physiology of the ear, as most that has been learnt on the subject is of recent date.

We need not dilate on the importance of hearing. But a few words on sound may not be misapplied.

Sound is the result of an impulse of any kind made on the organ of hearing. Usually, the impulse is conveyed by the air. The body by which the sound is produced, denominated by Professor Wheatstone *a phonic*, occasions in the surrounding air vibrations or oscillations, corresponding in number and extent to those which exist in itself; and these vibrations or oscillations being propagated to the organ of hearing, give rise to the sensation. It would be idle to multiply instances of this. The sound of a cannon fired is as good as any.

But the sound may be communicated directly through the bones of the cranium, or it may arise from direct contact of a solid with the tympanum. Every body who has had a tooth drawn must have been struck with the sound occasioned by the extraction; and the beating of the carotids in cases of nervousness or of cardiac hypertrophy, is a familiar instance of the sound conveyed by the solid structure of the cranium. A fine probe introduced carefully through the meatus externus, and made to impinge upon the membrana tympani, however gently, will occasion the sensation of sound.

Any irregular impulse communicated to the air produces a noise, in contradistinction to a *musical sound*. This latter results from a succession of impulses, which occur at exactly equal intervals of time, and which are exactly similar in duration and intensity. When these impulses succeed each other with great rapidity, the sound appears continuous, in consequence of the duration of the impression upon the auditory nerve. The frequency of repetition necessary for the production of a continued sound from single impulses is, according to Sir J. Herschel, probably not less than sixteen times in a second, though the limit would appear to differ in different years. In this respect hearing is analogous to sight. A rapid succession of images upon the retina produces the idea of uninterrupted colour or light. The schoolboy's amusement of twirling a burning stick in the air is a common example of this.

We distinguish in musical sounds, 1, the *pitch*; 2, the *intensity* or *loud-*

ness; 3, the *quality.* The pitch of the sound depends on the rapidity with which the vibrations succeed each other, and any two sounds produced by the same number of vibrations or impulses in the same time are said to be *in unison.* The loudness or intensity depends upon the violence and extent of the primitive impulse. The quality is supposed by Sir J. Herschel to depend on the greater or less abruptness of the impulses, or generally, on the law which regulates the excursions of the molecules of air originally set in motion.

Different media convey sound with different rates of velocity. In air at the temperature of 62° Fahr. sound travels at the rate of 1125 feet in a second, or 1090 feet in a second in dry air at the freezing temperature.

This velocity is independent of the pitch and quality of sound. Distance does not destroy the harmony of a rapid piece of music played by a band. Biot caused several tunes to be played on a flute at the end of a pipe 3120 feet long, and found that they could be distinctly heard without the slightest derangement.

"Neither is the velocity of sound affected by an increase of density in the air. It is, however, greater in warm than in cold air in consequence of the greater elasticity of the former. In the different gases much variety has been observed in the velocity of sound; through carbonic gas the rate of the velocity is said to be one-third slower than ordinary, but through hydrogen gas, which is twelve times more elastic than common air, the speed exceeds the usual rate three and a half times. A more striking difference is as regards the intensity of sound or the impression it is capable of producing on our organs of hearing. This varies considerably with the increase or diminution in the density of the transmitting gas. By means of a piece of clock-work, which caused a hammer to strike at regular intervals, the conducting power of the gas could be estimated, the clock-work being placed in a glass receiver filled with the gas. It was thus that Priestly ascertained that in hydrogen the sound was scarcely louder than in vacuo; in carbonic acid and oxygen it was somewhat louder than in air." 566.

Water can transmit sound, or we may well suppose that God would not have given ears to fish. M. Colladon, by means of a tin cylinder three yards long, and eight inches in diameter, closed at its lower end but open to the air above, plunged vertically in the water, was enabled to hear the sound of a bell at the distance of about nine miles, and from numerous observations he concluded that the velocity of sound in water at about 46° Fahr. was equal to 4708 feet in the second.

Solids are still better conductors of sound, and those which are homogeneous, hard, and elastic, are the best. A conclusive experiment, by Herhold and Rahn, is related by Chladni:—a metallic wire 600 feet long was stretched horizontally, and at one end a plate of sonorous metal was attached; when the plate was slightly struck, a person at the opposite end, holding the wire in his teeth, heard at every blow two distinct sounds, the first transmitted almost simultaneously by the metal, the other arriving later through the air. Biot with the assistance of Messrs. Boulard and Malus, concluded the velocity of sound in cast iron at the temperature 51° Fahr. to be 11,090 feet in a second.

Sound, like light, admits of reflexion, the angle of which equals the angle of incidence. Echos are such reflexions, and, the sound being reflected once or oftener, the echo is correspondingly single or repeated.

"The phenomena of echos illustrate beautifully the analogy between sound and light. Thus, the reflection of sound from concave and convex surfaces takes place exactly as in the case of light: if a reflecting surface be concave towards an auditor, the sounds reflected from its several points will converge towards him exactly as reflected rays of light do; and he will receive a sound more intense than if the surface were plane, and the more so the nearer it approaches to a sphere concentric with himself; the contrary is the case if the echoing surface be convex. If the echo of a sound excited at one station be required to be heard most intensely at another, the two stations ought to be *conjugate foci* of the reflecting surface, i. e. such that if the reflecting surface were polished, rays of light diverging from one would be made after reflection to converge to the other. Hence, if a vault be in the form of a hollow ellipsoid of revolution, and a speaker be placed in one focus, his words will be heard by an auditor in the other, as if his ears were close to the other's lips. The same will hold good if the vault be composed of two segments of paraboloids having a common axis, and their concavities turned towards each other; only in this case sounds excited in the focus of one segment will be collected in the focus of the other after two reflexions.

The most favourable circumstances for the production of a distinct echo from plane surfaces is when the auditor is placed between two such exactly half-way. In this situation the sounds reverberated from both will reach him at the same instant, and reinforce each other: if nearer to one surface than the other, the one will reach him sooner than the other, and the echo will be double and confused." 567.

Functions of the Ear.—Dr. Todd examines, in succession, the offices or functions of the internal ear—the middle ear—and the nerves.

1. *Of the Internal Ear.*—It is probable that the *vestibule* forms the most essential part of the apparatus of hearing, from the fact that it is met with in every class of animals in which such an apparatus can be found. Here is the seat of the principal expansion of the auditory nerve upon the saccule and common sinus, which floating in the perilymph communicate, through the medium of that fluid, with the membrane of the fenestra ovalis, and consequently with the air contained in the tympanum. Any vibrations or oscillations then excited in the membrane of the fenestra ovalis, cannot fail to affect the perilymph to a proportional extent, and through it the membranous vestibule. In the simple ear of crustaceous, of cephalopods, and of the lowest cyclostomous fishes, the sonorous impressions are conveyed to the vestibular cavity through its solid parietes; and even in the higher organized fishes the labyrinth, enclosed in the solid cranium, receives through it the impulses of sound, and has no communication with the external air.

Dr. Todd touches on the part played by the *otolithes*, or calcareous concretions, and by the *otokonies*, or calcareous dust, found in the sacculus vestibuli of the ears of cephalopods and fishes. But though, no doubt, their vibration assists in producing the sensation of sound, their precise mode of action does not seem to us to be elucidated.

a. In man, and in animals provided with an external ear and tympanum, as well as labyrinth, the sonorous vibrations are apparently communicated in two ways by the meatus externus and tympanum to the vestibule and semicircular canals—and by the bones of the head direct to the auditory nerve.

"Sounds proceeding from external bodies, as Weber observes, are conveyed in the former way; but the oscillations of one's own voice, although they in

part find their way by the external passage, are chiefly conducted by the cranial bones; and, as Professor Wheatstone has remarked, those sounds are best heard which are articulated most in the mouth, and with that cavity least open, as *e*, *ou*, *te*, *kew*. Closing both ears by firmly pressing the hands upon them, one's own voice is not heard less distinctly, but on the contrary more loud and clear than when both ears are left open; and if only one ear be closed, the voice is heard more distinctly and louder in that ear than in the open one." 368.

There can be no doubt of the communicability and communication of sounds, and, amongst others, of the hearer's voice, through the solid parts of the head. But, however it may be with others, *we* cannot hear our own voice better with our ears closed than with them open. We conceive that this is a bit of a refinement on the part of Weber, and we suspect, too, that if Dr. Todd will plug his ears effectually and articulate either syllables or words, he will find them rendered less distinct, not more so. At all events, this is the case with ourselves, and it is what one would anticipate. But to proceed:—

"One or two experiments with the tuning-fork show not only that the cranial bones do conduct, but also that sounds, inaudible or imperfectly audible through the meatus externus, may be distinctly heard when the sounding body is brought into contact with a bone of the cranium or face. When the tuning-fork is put into vibration by striking it against any solid body, if held near the external ear its vibrations are heard distinctly, but let the handle be applied to the teeth or to the superior maxilla, and the sound appears much louder; or if the fork be held near the ear until the sound has almost died away, and then its handle be applied to the superior maxilla or the teeth, the sound seems greatly to revive and continues for a considerable period, the handle being kept in contact with the bone.

When the conducting stem of the sounding tuning-fork is placed on any part of the head, if both ears be closed by being covered with the hands, a considerable augmentation of the sound will be observed.* If the sounding-fork be kept in contact with the head for a short time, both ears remaining open, and then one ear be closed, the sound will be greatly augmented in the closed ear, and will appear to be heard exclusively by it. This experiment is more striking if the stem of the tuning-fork be applied to the mastoid process on one side: when both ears remain open, the sound seems to be heard chiefly by the ear in the vicinity of which the stem is placed, but when the opposite ear is closed, it appears as if the sound were transferred from the open to closed ear; and if the ear be alternately opened and closed, the sound will alternately appear to be transferred from the one to the other. Similar phenomena may be observed if both ears are closed on the first application of the tuning-fork. The sound is at first heard in the adjacent ear, and either remains in it or is tranferred to the opposite one, according as the former remains closed or is opened. Mr. Wheatstone adds that if the meatus and concha of one ear be filled with water, the sound from the tuning-fork will be referred to the cavity containing the water in the same way as when it contained air and was closed by the hand.

These phenomena afford obvious examples of the communication of sound through the bones of the head. The augmentation of the sound in the closed ear appears to result, as Mr. Wheatstone explains, from the reciprocation of the vibration, by the air contained within the closed cavity, and this explanation is confirmed by the fact, that when the meatus is closed by a fibrous substance, such as wool, no increase is obtained." 568.

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* "These experiments were first suggested by Professor Wheatstone.—See his experiments on audition in the Journal of the Royal Institution for July 1827."

These facts, if they be facts, are certainly curious. But if they possess no surer basis than the statement that we hear our own voice best when the ears are stopped, they must be received with a little reservation.

If we pronounce such sounds as *e* or *kew*, with one ear open and one closed, we are told that they are heard more distinctly and loudly by the closed ear than by the open one. We regret that it is not our good fortune to find it so. On the contrary, the sound is less distinct and less loud, though there is a sort of rough, subdued reverberation distinguishable in the closed ear. This, we should say rather deadens the sound, than augments it. As we have no opportunity, at present, making experiments with the tuning-fork, we say no more upon this subject.

Functions of the Cochlea.—It would, of course, be desirable to ascertain these, if possible. But it is not easy to do so.

a. The observations and experiments of Weber render it very probable that the cochlea is that part of the labyrinth which is more particularly suited to appreciate sounds communicated through the solid case of the head, or, to use his words, that sounds propagated through the bones of the head are heard specially by the cochlea, but that sounds conducted through the external meatus are perceived by the membranous vestibule and semicircular canals more easily than the cochlea. The following considerations favour these views.

It is an admitted fact in acoustics that sounds are most perfectly conducted by substances of uniform elasticity, and that when propagated from air or water to a solid, or from a solid to air or water, they are conducted much less completely. Now, inasmuch as the cochlea may be regarded as part and parcel of the cranial bones, the sounds which are propagated by these bones would reach the nervous expansion in that portion of the labyrinth by the most direct route; whereas, to affect the remaining parts of the labyrinth, the sound must be conducted from the bone through the perilymph to the membranous vestibule and semicircular canals. Moreover, when it is considered that the cochlea nerves are disposed in a radiated manner in the lamina spiralis, it will appear evident that the oscillations propagated to the petrous portion of the temporal bone must exert a direct influence on the cochlea portion of the auditory nerve.

Such is the account which Dr. Todd gives of the views of Weber. They may be admitted to be plausible, but that is all; and, as Dr. Todd remarks, they throw no light on the peculiar form and mechanism of the cochlea.

b. Autenrieth and Kerner believed the cochlea to be that part of the auditory aparatus by which we perceive what the French call the "timbre" of sounds; that quality, namely, which depends on the nature of the material of which the sounding body is constituted, as well as on its form and size, and in some degree on the manner in which sound is elicited from it; and they considered it the office of the vestibule to convey to the sensorium the pitch and strength of sounds. Their opinion as to the function of the cochlea was founded on some experiments as to the extent to which certain of the lower animals were affected by particular instruments of music; the results obtained from these experiments, when taken in connexion with certain differences in the form and other characteristics of the cochlea in those

animals, led these authors to the conclusion that "those animals alone seemed to perceive a difference of the 'timbre' of sounds of pretty uniform pitch and loudness, in whom the cochlea was very long, and projected considerably into the cavity of the tympanum, and was not much concealed by the surrounding bony substance. Thus it appeared that a dog (the cochlea of dogs being longer than that of cats), upon hearing a certain note of the clarionet, set up a howl, but seemed in no way affected at hearing the same note from the flute or violin; but the cat continued undisturbed, although a variety of instruments was sounded in her hearing. A rabbit (in which the cochlea is prominent) ran away at the note C elicited from a glass tumbler or from a string, but remained still when the same note was sounded even more loudly by the flute."

We quite agree with Dr. Todd in his opinion of the unsatisfactory nature of these experiments, and of the flimsy texture of the theory they support. It would be useless arguing a question of so unsubstantial a character.

c. Whatever the precise use of the cochlea may be, it is found in an advanced condition of the organ of hearing, and, therefore implies much perfection of the sense.

Functions of the Common Sinus and Semicircular Canals.—The connexion of the fenestra ovalis and membrana tympani, through the medium of the ossicula, makes it natural to suppose that the semicircular canals and common sinus must be especially affected by the sounds which are conveyed through the meatus externus. An experiment of Weber illustrates the relation of the perilymph to the membranous labyrinth, and shows that an impulse upon the membrana tympani is capable of affecting it. In some birds, the falcon for example, the semicircular canals are so large, that the membranous canals may be easily seen. If in such a bird one osseous semicircular canal be opened by a small opening, care being taken not to injure the membranous canal, and then we press the membrane of the tympanum inwards, at each compression we observe the water contained in the bony canal to flow out with a jerk. He therefore concludes that the sonorous undulations conveyed by the cranial bones are communicated more immediately to the nerve of the cochlea, but those conveyed by the external meatus to the nerve of the vestibule.

"The semicircular canals are remarkable for the constancy of their number, and of their relative position with respect to each other, in all animals in whom they are found. They exist in almost all fishes, and in all the other vertebrate classes, and in these they are never less than three in number, two of which are always placed vertically, and one horizontally. The opinion that the arrangement of these canals has reference to conveying the sensation of the direction of sounds, I find expressed by Autenrieth and Kerner in the paper already referred to. 'In no animal,' they say, 'are these canals ever more or fewer on each side than three, which are so situated that they correspond to the three dimensions of a cube, its length, breadth, and depth, and that every sound arriving in one of these three directions will always strike one canal at right angles to its axis, and another in its length. The position of these canals is likewise such, that the corresponding canals of opposite sides cannot be parallel, and that therefore any sound which strikes the head in any given direction, affects the semicircular canal of one side much more than the corresponding one of the

opposite side, whereby it may be determined whether the sound coming in a straight line (from west to east for example), has really moved from west to east, or from east to west.' They state, that in animals in whom the semicircular canals are highly developed, the power of distinguishing the direction of sounds is marked to a proportionate degree. Thus in the mole, the development of these canals is very considerable, and from a simple experiment it appears that this animal readily distinguishes the direction of sounds. A mole was introduced into a wide but flat vessel filled with earth, in which he was allowed to burrow, and it was found that the mole could be made to move about by sounding an instrument outside the vessel; if the instrument were sounded on one side, the animal would always immediately turn to the other." 570.

This looks too pat to be true. We think it was John Bell, who said that experiments were the greatest liars on earth. Without going so far as that, it must be owned that they do often say odd things. They resemble that mythological monster which could hear excellently with one ear, but very indifferently with the other. Experimenters have a singular facility in listening to whatever chimes with their fancies, and as obdurate a deafness to what does not. Thus Autenrieth and Kerner had no sort of difficulty in perceiving that a mole "*always and immediately*" turned to the side on which *they* sounded an instrument. But Esser, who repeated the experiment, found no such thing. He "assures" us that the direction of the movements of the mole was *not* influenced by the direction of the tones of the instrument. Some might feel it hard to explain this contradiction on a mere matter of fact. We are old stagers, and feel no difficulty on the subject.

The human semicircular canals greatly exceed in width all others examined by Autenrieth and Kerner, but this excess is more as regards the canals properly so called, but does not apply to the ampullæ. Scarpa had already remarked, that although the canals of oxen and horses were narrower than those of man, the ampullæ were scarcely at all smaller than in the human subject. These observers further remarked, in many animals they examined, an inverse ratio between the width of the ampullæ and that of the canals; that the former were wider in proportion as the latter were narrow. In fine, they conclude, as has been already hinted, that, cæteris paribus, the wider the semicircular canals, the greater the power of distinguishing the direction of sounds.

"Professor Wheatstone advocates the theory that our notions of audible direction depend upon the excitation of those portions of the auditory nerve which belong to the semicircular canals. He conceives that we distinguish best the direction of those sounds which are sufficiently intense to affect the bones of the head, and that it is from the portion which is transmitted through those bones that our perception of the direction is obtained. Thus we always find it difficult to tell by the ear the position whence the feeble tones of the Œolian harp proceed. The three simicircular canals, then, being situated in planes at right angles with each other, are affected by the sound transmitted through the bones of the head with different degrees of intensity, according to the direction in which the sound is transmitted; for instance, if the sound be transmitted in the plane of any one canal, the nervous matter in that canal will be more strongly acted on than that in either of the other two; or if it be transmitted in the plane intermediate between the planes of this canal and the adjacent one, the relative intensity with which those two canals will be affected, will depend upon the direction of the intermediate plane. The direction suggested to the mind

will correspond with the position of the canal upon which the strongest impression has been made."* 570.

Our readers, at least many of them, are probably aware that Flourens has made some very cruel, bloody, and bootless experiments on living animals, to determine the functions of the different parts of the ear. When we reflect how difficult the dissection of the labyrinth is, even when the bone containing it is set in a vice before us, we may infer, without hesitation, the value of vivisections in such a case. We may say with Dr. Todd, that, had M. Flourens never attempted these experiments, physiology would have been none the worse, and our respect for his humanity would have been all the greater.

This is all that our author has to say on the functions of the labyrinth. It must be perceived and cannot but be owned, how vague are the ideas of the offices of its several parts. Plausible conjecture is almost all that we have, and, as experiments on animals are almost prohibited by the nature of the subject, we are compelled to rest on analogy and on pathology. The former scarcely goes far enough—the latter has hitherto not assisted us much. But, as the structure of the ear is more examined in cases of congenital or acquired deafness, we may hope that advances will be made in our acquaintance with the part played by the several portions of the labyrinth.

Of the Accessory Parts of the Organ. These are composed of, and Dr. Todd successively examines, the external ear—the tympanum, its membrane, and ossicles—and the Eustachian tube.

The External Ear.—This may be considered as made up of the auricle and of the meatus externus.

The auricle is found completely developed only in mammifera, and exists pretty generally throughout the class, though varying much in form. It is said that those animals which are remarkable for the large development of the auricle are almost all timid or nocturnal, and consequently require an acute sense of hearing. In such animals there can be little doubt that the auricle is used as an ear-trumpet, for the purpose of collecting and concentrating sounds. Treviranus thinks that in the lower animals, but *especially in man*, the principal use of the auricle is in determining the direction of sounds. Dr. Todd observes that a remark of Mr. Gough, the author of a highly interesting paper in the Manchester Memoirs "on the method of judging by the ear of the position of sonorous bodies," offers a strong argument against this notion. He observes that, whatever may be the direction of a sound in the open air, as soon as it enters the auditory passage, it is compelled to follow the course of that duct until it reaches the apparatus in which the sense

* "Dr. Young thought that the semicircular canals seemed very capable of assisting in the estimation of the acuteness or pitch of a sound by receiving its impression at their opposite ends, and occasioning a recurrence of similar effects at different points of their length, according to the different character of the sound; while the greater or less pressure of the stapes must serve to moderate the tension of the fluid within the vestibule, which serves to convey the impression. The cochlea seems to be pretty evidently a micrometer of sound.—See Med. Lit. p. 98"

of hearing resides. We will not pretend to say that in man the auricle does contribute to the discrimination of the direction of sounds, but we do not think Mr. Gough's objection so fatal to the hypothesis as it seems to Dr. Todd. When the motion of the auricle is voluntary, it is very possible that the muscular action becomes a sort of empirical source of knowledge respecting the direction of sound. Certain actions are associated with such motions of the auricle as render the sound more distinct. That distinctness leads, by experience, to a knowledge of direction. This is analogous with the process by which we become sensible of the position of our limbs, the weight of bodies, perhaps even the distance of objects. Of course what we have observed applies only to animals who have voluntary motions of the auricle. It is difficult to suppose that the auricle contributes much to the knowledge of the direction of sound in man.

The experiments of Savart are calculated to throw light on the functions of the meatus externus as well as of the membrana tympani.

If a thin membrane, such as very fine paper, is carefully stretched horizontally over the mouth of a glass, or of a small delft basin, and if a thin layer of sand is spread on this, and a glass thrown into vibration by a violin bow is held at a little distance from it; that the paper immediately begins to vibrate is shewn by the motions excited in the sand, the particles of which arrange themselves into figures, which are sometimes perfectly regular, and which form with so much rapidity that the eye can scarcely follow "the circumstances which accompany the transformation of the thin layer of sand into a greater or less number of lines of repose." It is clear from these data, that vibrations are communicated from one body through the air to another. The next step was to shew that the membrana tympani is so affected by the aërial undulations excited by a sonorous substance. This Savart proved to be the fact.

The temporal bone having been separated, he sawed away the osseous meatus so as to expose the membrane on a level with the rest of the bone, and when it was sufficiently dry, he covered it with a thin layer of sand. A vibrating glass held parallel and very near the surface of the membrane, occasioned a slight movement of the grains of sand, but, owing to the slight extent and the shape of the membrane, it was impossible to determine the existence of any nodal line. In a second experiment the cavity of the tympanum was opened, so as to expose the ossicles of the ear and their muscles; and it was observed that when the internus mallei muscle acted and rendered the membrane tense, it was much more difficult to produce manifest movements in the grains of sand; thus affording much reason to suppose the tensor tympani muscle is analogous in its use to the iris, and destined to preserve the organ from too strong impressions.

Dr. Todd goes on to state:—

"In imitation of the mechanism by which the tension of the membrana tympani is effected, and with a view to determine more decisively the effects produced by variation of the tension of that membrane, Savart constructed a conical tube, with its apex truncated and covered by a layer of very thin paper, which was glued to the edge of the opening. A little wooden lever, introduced through an opening in the side of the tube, and resting on the lower margin of this opening as a fulcrum, was used to vary the tension of the membrane, one of its extremities being applied to the under surface of the membrane. It is evident that, by depressing the extremity of the lever that was external to the tube, the inner one

would be raised, and thus the membrane stretched to a greater or less degree according to the force used; on the other hand, by elevating the outer extremity, the inner one was separated from the membrane, which was accordingly restored to its original tension. This little lever was employed in imitation of the handle of the malleus, which under the influence of its muscles causes the variation in the tension of the membrana tympani. The artificial tympanic membrane then having been covered with a layer of sand, it was found that under the influence of a vibrating glass used as in the former experiments, a manifest difference was produced in the movements of the grains of sand, by increasing the tension of the paper; the greater the tension, the less the height to which the grains of sand were raised; and these movements were more extensive when the lever was withdrawn from contact, and the membrane left to itself.

From these experiments Savart concludes that the membrane tympani may be considered as a body thrown into vibration by the air, and always executing vibrations equal in number to those of the enormous body which gave rise to the oscillations of the air. But what is the condition of the ossicles of the tympanum whilst the membrane is thus in vibration? The result of the following experiment affords a clue to the answer of this question. To a membrane stretched over a vessel, a piece of wood uniform in thickness is attached, so that the adherent part shall extend from the circumference to the centre of the membrane, while the free portion may project beyond the circumference. When a vibrating glass is brought near this membrane, very regular figures are produced, which however are modified by the presence of the piece of wood, and the vibrations of the membrane are communicated to the piece of wood, on which likewise regular figures may be produced. The more extensive the membrane, the longer and thicker may be the piece of wood in which it can excite oscillations, and Savart states that, with membranes of a considerable diameter, he has produced regular vibrations in rods of glass of large dimensions. The oscillations of the piece of wood are much more distinct when the adherent portion is thinned down, by which it seems, as it were, more completely identified with the membrane, and consequently the oscillations of this latter are communicated directly to the thinned portion of the wood, and thence extended to the thick portion: sand spread upon it will exhibit active movements, and will produce very distinct nodal lines. Thus it may be inferred that the malleus participates in the oscillations of the tympanic membrane; and these vibrations are propagated to the incus and stapes, and thus to the membrane of the fenestra ovalis." 573.

The chain of ossicles forms, as has generally been supposed, a conductor of vibrations, but the malleus, in addition, regulates the tension of the membrana tympani. Dr. Todd has carefully repeated the experiments of Savart, with precisely similar results.

Savart wished to ascertain how far the external ear and auditory canal increase the vibrations of the membrane.

He formed, writes Dr. Todd, a conical tube of pasteboard, with a very wide mouth at its base, the opening at the smaller end being closed by a thin paper stretched over it and glued to the margins of the opening. This tube is placed resting on its base, the membrane being upwards and perfectly horizontal, so that a layer of sand may be spread over it. When a vibrating glass is brought near and parallel to the upper surface of this membrane, it immediately begins to vibrate, and the grains of sand are tossed about, but raised but very slightly from the surface. If, however, the vibrating glass be placed near the base or the wide and open extremity of the tube, the vibrations of the membrane will be found to be much more manifest, and the excursions of the grains of sand so considerable that they are often raised to

a height of three or four centimetres; so that there is a manifest difference in the influence produced upon the membrane by the sonorous undulations excited in the air according as they impinge upon the external surface of the membrane or upon that which is turned towards the interior of the tube. This phenomenon, Savart adds, may depend upon two causes, namely, upon the concentration of the sonorous undulations by the tube, or upon the communication of motion to the parietes of the tube, which again would communicate it to the membrane. With a view to ascertain which of these causes was the effective one, a second conical tube, open at both ends, was held with its narrow extremity a little above and corresponding to the narrow extremity of the former one, but so that there was no contact between them. If now the glass is made to vibrate successively at the large orifices of the two tubes, it will be found that, when placed at the orifice of the tube to which the membrane is attached, the oscillations of that membrane are considerably greater than when the aerial undulations reach it through the other tube. Whence it may be inferred that in all probability the external ear and auditory canal have, besides any influence they may exert in modifying the movements of the particles of the air, the additional function of presenting a large surface to the aerial undulations, consequently to enter into vibration under their influence, and thus to contribute to increase the excursions of the vibrating parts of the membrane with which they are immediately in contact; the auricle, by the variety of the direction and the inclination of its surfaces to one another, can always present to the air a certain number of parts, whose direction is normal (at right angles with) to that of the molecular movement of that fluid.

A familiar instance of the use of the external ear in collecting and directing the sonorous undulations, may be seen in the assistance often given to hearing, by placing the hollow hand behind the auricle and drawing the latter forward. This deaf people frequently do. And the loss of the auricle is said to be followed by dullness of hearing, particularly in those animals in which the osseous meatus is wanting.

Action of the Stapedius.—The contraction of the stapedius muscle causes the base of the stapes to compress the membrane of the fenestra ôvalis to a greater or less extent, so that the degree of tension of that membrane depends on the condition of this muscle. Compression exerted upon the membrane of the fenestra ovalis extends to the perilymph and through it is propagated to the membrane of the fenestra rotunda, and in this way the same apparatus which regulates the tension of the membrane of the fenestra ovalis performs that office for that of the fenestra rotunda. Savart has invented a neat apparatus for the illustration of the manner in which this may take place. We have not space, however, for the description of it.

It appears, continues Dr. Todd, from the anatomy of the ear, "that the only muscles which have been satisfactorily demonstrated are tensors of the tympanum; and that at whatever extremity of the chain of ossicles muscular effort be first exerted, a corresponding effect will be produced at the other; that when the stapedius muscle acts, the malleus is thrown into a position favourable to the tension of the membrani tympani, and, on the other hand, the contraction of the internus mallei depresses the stapes, and consequently increases the tension of the membranes of the two fenestræ. The cessation of muscular action restores all three membranes to their original laxity, nor

does it appear that they admit of any further degree of relaxation through the influence of any vital process. The incus forms a bond of connexion between the two other bones, and its motions depend entirely upon theirs in consequence of its articulation with both, while from the fixedness of its connexion with the mastoid cells, as well as its intermediate position, and its not having any muscles inserted into it, it is obvious that its motions must be much more limited than those of the other bones. Its use seems to be to complete the chain in such a way, that by reason of its double articulation with the malleus on the one hand and the stapes on the other, the tension of the tympanic membranes may be regulated without any sudden or violent motion, which could scarcely be avoided were the conductor between the membranes of the tympanum and fenestra ovalis one piece of bone."

Savart offers the following conjectures of the use of the tympanum, its membrane and its ossicles. If the membranes of the fenestra, he says, had been in immediate contact with the atmosphere, their elastic state would have been constantly undergoing changes, under the influence of the vicissitudes of temperature of the air, a circumstance which would, in all probability, impair the power of the organ in detecting differences of sounds. He presumes therefore that the membrani tympani prevents this contact of the atmosphere with the membranes of the labyrinth, and that the cavity of the tympanum and the mastoid cells form a kind of receptacle in which the air, which finds its way into the tympanum through the Eustachian tube, acquires the constant temperature of the body, and establishes in front of the openings of the labyrinth a sort of atmosphere proper to themselves, the temperature of which does not vary.

Inaudibility of Certain Sounds.—Dr. Wollaston observed, that "an ear which would be considered as perfect with regard to the generality of sounds may at the same time be completely insensible to such as are at one or the other extremity of the scale of musical notes, the hearing or not hearing of which seems to depend wholly on the pitch or frequency of vibration constituting the note, and not upon the intensity or loudness of the noise." And we owe to this distinguished man the knowledge of the interesting fact, that an insensibility of the ear to low sounds may be artificially induced, by exhausting the cavity of the tympanum to a great degree. This may be effected by forcibly attempting to take breath by expansion of the chest, the mouth and nose being kept shut; after one or two attempts, the pressure of the external air is strongly felt upon the membrana tympani, which is thus from the external pressure thrown into a state of considerable tension. An ear in this state becomes insensible to grave tones, without losing in any degree the perception of more acute ones. This induced defective state of the ear, from exhaustion of the tympanum, may even be preserved for some time without the continued effort of inspiration and without even stopping the breath, and may in an instant be removed by the act of swallowing. "If I strike the table before me with the end of my finger," continues Dr. Wollaston, "the whole board sounds with a deep dull note. If I strike it with my nail, there is also at the same time a sharp sound produced by quicker vibrations of parts around the point of contact. When the ear is exhausted, it hears only the latter sound, without perceiving in any degree the deeper note of the whole table. In the same manner, in listening to the sound of a

carriage, the deeper rumbling noise of the body is no longer heard by an exhausted ear; but the rattle of a chain or screw remains at least as audible as before exhaustion.

The same condition of the tympanum is produced by the sudden increase of external pressure. This is felt on descending in the diving bell, which, according to Wollaston occasions closure of the Eustachian tube. Dr. Todd descended in the bell at the Polytechnic Institution. The first effect, he tells us, of the pressure on the tympanic membrane was the production of a crackling noise, which was immediately succeeded by a painful sense of pressure in both ears; but this is immediately relieved by the act of swallowing; it soon, however recurs, and may be in a like manner relieved. Grave tones were least distinctly heard.

"In such cases then it would appear from the strong compression exerted on the membrana tympani, that membrane cannot vibrate in unison with tones which result from a small number of vibrations. On the other hand we may infer, from Dr. Wollaston's observations, that 'human hearing, in general, is more confined than is generally supposed with regard to its perception of very acute sounds, and has probably in every instance some definite limit at no great distance beyond the sounds ordinarily heard.' The ordinary range of human hearing comprised between the lowest notes of the organ and the highest known cry of insects, includes, according to Wollaston, more than nine octaves, the whole of which are distinctly perceptible by most ears. Dr. Wollaston has, however, related some cases in which the range was much less, and limited as regards the perception of high notes; in one case, the sense of hearing terminated at a note four octaves above the middle E of the piano-forte; this note he appeared to hear rather imperfectly, but the F above it was inaudible, although his hearing in other respects was as perfect as that of ordinary ears; another case was that of a lady who could never hear the chirping of the gryllus campestris; and in a third case the limit was so low that the chirping of the common house-sparrow could not be heard. Dr. Wollaston supposes that inability to hear the piercing squeak of a bat is not very rare, as he met with several instances of persons not aware of such a sound." 575.

Integrity of the Membrana Tympani not essential to Hearing.—It is unnecessary to dwell on this. The membrane has been destroyed or punctured, without loss of hearing, sometimes with advantage to it.

The Eustachian Tube.—This has evidently a double office. It carries air into the tympanum—and it affords an outlet for the escape of such sonorous undulations as do not impinge upon the labyrinthic wall of the tympanum, which, were there no such communication with the External air, would cause an echo, and in this respect it performs a function similar to that of the mastoid cells.

Functions of the Nerves.—Not much can be said on this subject. The portio mollis of the seventh is evidently the nerve of hearing; and the muscular apparatus of the tympanic ossicles receives its nerves partly from the facial and partly from the otic ganglion, thus exhibiting an analogous arrangement to that of the muscular structure of the iris. The offices of the chora tympani, and of the tympanic anastomosis are far too conjectural to be dwelt on.

Dr. Todd concludes with the following brief summary of what is known,

or, rather, supposed, respecting the functions of the several parts of the organ of hearing.

1. The *vestibule* is the essential part of the organ. It detects the presence and intensity of sound, and especially of those sounds conveyed through the external ear and tympanum.

2. The *cochlea* lying in immediate connection with the bone, receives those sounds which are propagated through the bones of the head. According to Kerner it is the medium of the perception of the *timbre* or quality of sounds.

3. Of the function of the *semicircular canals* we know nothing. That they aid in forming a judgment of the direction of sounds is conjectured by Autenrieth and Kerner, and more recently by Wheatstone.

4. The *tympanum* and its membrane render the internal ear independent of atmospheric vicissitudes, and the former affords a non-reciprocating cavity for the free vibration of the latter, as well as of the chain of ossicles.

5. The *chain of ossicles* acts as a conductor of vibrations from the membrana tympani to the fenestra ovalis, and under the influence of the muscles regulates the tension of the membrana tympani, as well as the membrane of the fenestra rotunda, so as to protect the ear against the effects of sounds of great intensity.

6. The *external ear* and *meatus* are conductors of vibrations; the former in some degree collects them as a hearing-trumpet would do, and probably assists in enabling us to judge of the direction of sounds.

We have given this article at considerable length for two reasons. In the first place, the majority of medical men are probably very imperfectly acquainted with the functions of the auditory apparatus. In the second place, the diseases of the ear are beginning to interest the profession, and will probably, ere long, be snatched from the hands of the ill-informed people who now monopolize the treatment of them. We are anxious to assist in effecting this desirable object, and we have latterly seized every opportunity of diffusing information on the subject. This we shall still continue to do, and it will not be our fault if our readers do not become acquainted with what has been or will be made out in reference to acoustic medicine.

II. THE DISEASES OF THE EAR.

The present treatise by a lecturer on anatomy and surgery gives promise of the diseases of the ear being soon generally studied; and, although we lately reviewed at some length a translation of Dr. Kramer's work, showing the present state of knowledge on the diseases of the ear, yet we shall not hesitate to devote a few pages to the essay of Mr. Pilcher, and thus further the excellent object which the London Medical Society seems to have had in view—that of calling the attention of the profession to the subject.

The treatise is divided into two parts—the first devoted to the Anatomy of the Ear and Physiology of Hearing, and the second to the Diseases of the Ear. In the first we find collected, a clear digest of the anatomy and functions of the organ of hearing, and of its development in the animal gradation, exceedingly useful, as conveying correct information on this division of the subject, preparatory to the efficient study of the diseases of the organ

and in a very accessible form. As we have already dwelt on the functions of the ear, we need not revert to them now.

To the second division, devoted to the abnormal condition of the various structures entering into the formation of the ear, Mr. Pilcher directs attention, as the most important part of the work. The malformations which have been observed, and such slight treatment as their nature generally permits, form an introduction to this second part. In reference to this it is observed that, "as different portions of the organ, at different periods of formation, bear an analogy more or less striking to similar parts in the lower animals, so it is easy to trace in their malformations a correspondence to the permanent structure of the inferior classes."

The only malformations of the auricle which require surgical aid, Mr. Pilcher defines to be the absence of the auricle, and the closure of the opening; "the former appearing to lessen but slightly the power of hearing," and the deficiency can only be supplied by an artificial ear. The second malformation admits of remedy in two ways. "The overlapping of the tragus and antitragus, if prejudicial to hearing, may be readily removed by the knife; or if it be of small extent, dilatation by the gentle pressure of a tube or a tent may be sufficient."

Contraction of the meatus auditorius externus is next noticed, to be treated by dilatation. In cases of "obliteration of auditory-canal" (non formation rather?) an operation is recommended, under certain conditions, for creating one by a trocar. No case however is quoted in illustration, and it seems of hazardous nature and promising but little success. When only a fold of skin passes across, it is easy then to conceive that the bistoury or trocar might effect a permanent opening and much improve the condition of the patient.

Many other malformations are enumerated, affecting the middle and internal ear, but as they are beyond the surgeon's cut and consequently lead to few practical inferences, they are chiefly interesting as showing how frequently deafness may occur from structural alterations over which we can exercise no control.

We may observe, in reference to these cases generally, and even where an operation requiring both nicety and boldness is proposed, that in no instance has any case been brought forward to prove how far experience has shown it practicable with success or otherwise.

On coming to the consideration of the effects of disease on the various structures of the organ of hearing, we were glad to find that Mr. Pilcher at the outset states, that in its pathology the ear does not differ from other structures. In Dr. Kramer's work—and the same observation applies generally to treaties on the ear—its diseases are treated in a manner curiously contrived to render that complicated which is simple, and to give the impression that the diseases and the structures of the ear are unlike all others to which the human frame is liable. Whether such a conclusion was meant to be inculcated by their authors we will not to venture affirm, but that such is the direct tendency of the mode in which the subject is generally handled, admits of no dispute. A conclusion at least as injurious as it is erroneous. Such views too naturally flow from those who devote the whole of their time and attention to the treatment and consideration of any one organ or disease; effects common to all, are insensibly resolved into peculiarities in the minds

of such exclusive practitioners. Hence it follows, that the diseases of the ear, the eye, &c. will always be best understood and treated by those who practice the profession generally. Not that we would imply that they are to be thoroughly comprehended or skilfully treated without particular study—on the contrary, an exclusive study of their varieties, and various operative means required for their relief is absolutely required; but in the same manner as the eye has been very generally studied of late years as a branch of surgical practice, and not as the "one thing only needful," should the diseases of the ear be superadded to the usual course of surgical education.

The introductory paragraph so entirely coincides with the view we took of this subject in the review of Dr. Kramer's work, that we shall extract it as curiously confirmatory.

"In its pathology the ear does nor differ from other structures. From this general conclusion, perhaps, may be expected inspissation of wax in the meatus, the exact analogue of that secretion not being elswhere met with. Inflammation, therefore, is the affection to which, for the most part, this organ is obnoxious; and as this disease is modified in its progress, in its symptoms, and in its effects, by the structures which it attacks,—by the local predisposition of the organ affected,—by the general constitution of the individual,—by the causes which may excite it,—by the external circumstances, or conditions which accompany it,—so have the affections of the ear been arranged under various heads, nearly all of which may be reduced to inflammation and its consequences. As in all other organs, of which the seat of function is in an expanded nerve, the ear is likewise subject to an anæsthetic affection, dependent on some hidden morbid condition, and occasionally on inflammation, either of the acoustic nerve or of those parts of the brain, in connection with the organ. Again, in consequence of the vicinity of the ear to the brain, it often participates in the diseases and accidents of that organ; and the reverse is frequently observed of disease extending from the ear to the brain, or the skull. Lastly the accidental introduction of foreign bodies into the meatus; the rupture by a blow or otherwise of the membrana tympani, have been esteemed peculiar to the ear; but perhaps hardly with justice, as nearly similar accidents are met with in the nasal and visual organs." 155.

Mr. Pilcher takes a somewhat similar view to that which we expressed respecting Dr. Kramer's arrangement of diseases—somewhat confused and very unnecessarily complicated—presenting many distinctions without differences, he fell into the very error he so gravely and severely censured in all other writers, ancient and modern. Thus

"Kramer has arranged the diseases of the auditory passage under the heads of—1st. Erysipelatous Inflammation: —2ndly. Inflammation of the Glandular Structure of the Meatus; 3dly. Inflammation of the cellular Tissue; 4thly. Inflammation of the Periosteum. This division is useful to a certain extent, and every surgeon should bear in mind that each structure of the canal may be in certain cases the chief seat of inflammation; but that acute otitis is likely to continue exclusively in any one structure during its entire progress is more than doubtful. In most cases, perhaps, the disease commences in the glandular apparatus, but passes so rapidly to the cellular membrane, that the surgeon may not have had an opportunity of witnessing the affection in its original seat." 172.

Some interesting cases are given, illustrative of the fatal facility with which inflammation of the structures of the ear extends to the brain and its membranes, affording, moreover, additional reasons in support of our argu-

ment, that these are diseases which ought not to be the object of exclusive treatment.

In reference to the greatest improvement in auricular surgery, for which "entre nous soit dit" we are indebted to the post-master of Versailles, and not to either surgeon or aurist, catheterism of the Eustachian tube, Mr. Pilcher suggests an improved form with a whalebone stilet, which he thinks better than either wire or catgut, and as he speaks from personal experience, having often employed it in the cases he details, its merits should be carefully tested and the instrument adopted instead of Itard and Kramer's, if the result be favourable.

The perusal of this work has afforded us much pleasure, for if we had discovered but little essentially original matter, we are not the less sensible of the complete and comprehensive manner in which the whole subject has been treated. If not dictated by such large experience in this peculiar class of diseases as may have furnished notes for the Berlin Doctor, it is nevertheless superior in the simplicity of arrangement, and the careful exclusion of all unnecessary complications or wire-drawn distinctions, which may by ingenuity be made clear upon paper, but can never be in like manner read in the patient's symptoms or appearances. A work was wanted to place the whole subject within the grasp of all surgeons who choose to devote some little exclusive or particular study to the diseases of the ear and their treatment, and this has fairly and well supplied the deficiency.

A TREATISE ON THE MEDICAL JURISPRUDENCE OF INSANITY. By *J. Ray*, M.D. Boston, 1838.

THE very imperfect state of our medical literature with respect to works on insanity, considered exclusively in its legal relations, is acknowledged on all hands. Whilst so much has been done in promoting the comfort and ameliorating the treatment of the insane, it is truly melancholy to reflect how little has been accomplished towards regulating their personal and social rights, by more correct principles of legislation. In every thing connected with the legal relations of this unfortunate class of persons, we seem disposed to remain content with, and to go on rejoicing in, the wisdom of our ancestors. Some share of blame for this must perhaps attach to medical men, who have not bestirred themselves to obtain, for the results of their researches, that influence on the jurisprudence of insanity, which they have been so successful in obtaining over its pathology and treatment. In proof of the existence of this apathy we may mention, that the English language does not contain a work in which the various forms and degrees of mental derangement are treated, in reference to their effect on the rights and duties of man, if we except Dr. Haslam's work, which, however, is far too brief as well as too general, to be of any practical utility as a book of reference. Germany has had the start of us in this, as well as in every other branch of forensic medicine, Dr. Hoffbauer having published a treatise on insanity in connexion with its legal relations, of very great merit. In France too, Dr.

Georget has cultivated this field of enquiry with great zeal and success, and has produced a very excellent little work, entitled "Maladies Mentales, considerées dans leurs Rapports avec la Legislation Civile et Criminelle." When it is considered that opinions on insanity viewed in the light of a disease—of a derangement of the physical structure—have been for some time back progressively changing for the better; it will be readily acknowledged that its legal relations, which should obviously be determined in some measure at least by our views of its nature, ought to be modified by the progress of our knowledge. A work therefore on this subject, to be of real practical utility, must come from a practical physician, as a mere legal practitioner, who will consider insanity less in its pathological than its psychological relations, will be disposed to attach too little importance to its connexion with physical causes.

We have every day proofs in our courts of justice, that the principles laid down on the subject of insanity by legal authorities have received too much of that respect and veneration which is naturally felt for the opinions and practices of our ancestors, and that all innovations or attempts at improvement have been too much regarded rather as the offspring of new-fangled theories, than of the steady advance of medical science. Hence it is that the principles of legislation, in reference to insanity, have not kept pace with our knowledge of the nature and treatment of this disease.

Various divisions of the insane have been proposed by legislators and jurists. Lord Coke divides those *non compotes mentis* into four classes:—1, an idiot, who from his nativity by a perpetual infirmity is *non compos;* 2, he that by sickness, grief or other accident, wholly loseth his memory and understanding; 3, a lunatic that hath sometimes his understanding, and sometimes not; 4, he that by his own vicious act for a time depriveth himself of his memory and understanding, as he that is drunken.

The defect of this division appears at once from the difficulty experienced by law writers to point out the precise characters by which each class may be distinguished. "An idiot is defined to be a person, who cannot count or number twenty pence, or tell who was his father or mother, or how old he is, so as it may appear that he hath no understanding of reason, what shall be for his profit, or what shall be for his loss; but if he have sufficient understanding to know and understand his letters, and to read by teaching or information, he is not an idiot. Now the truth is, that the proportion of idiots, capable of attaining the kind of knowledge herein specified, by means of the ordinary intercourse with men, or of special teaching, is by no means small. The entire loss of memory attributed to the second class, is observed only as a sequel to madness or some other disease, or as the result of some powerful moral causes; so that if this is to be considered an essential character of madness, by much the larger proportion of madmen will be altogether excluded from this classification." "Judging from the almost exclusive use of the term *lunacy*, and the frequent reference to lucid intervals, the intermittent character of madness was either more common, some hundred of years since, or, which is more probable, in consequence of the general belief in its connexion with lunar influences, this intermission was imagined to occur far oftener than it really did."

Originally, commissions of lunacy were granted for the purpose of enquiring whether the individual was either an idiot *ex nativitate*, or a lunatic.

The obvious inadequacy of the division of the insane into idiots and lunatics, and the gross injustice of leaving out of the protection of law that larger class of insane, who, though neither *idiots*, nor *lunatics*, labour under more or less mental derangement, led to a change in the form of the writ, by which the phrase *unsound mind* was used for the purpose of embracing all others, who were considered proper objects of a commission.

Here again another difficulty presented itself: no fixed meaning was attached to the term *unsound mind*. From the feelings of disgust with which madness has generally been regarded, juries have frequently been unwilling to return a verdict of unsound mind, which in the popular acceptation was equivalent to insanity, though the individual's mental faculties may be so enfeebled as to render him totally unequal to the management of his affairs. And when the jury have returned the verdict of incapacity from weakness of intellect, the commission was quashed for want of the accompanying qualification of unsoundness of mind. The absurdity of this pertinaceous adherence to technical phraseology must certainly strike every impartial mind.

"The object of the commission is, to ascertain whether or not the party in question is incapable, by reason of mental infirmities, of governing himself and managing his affairs; and if they so find him, it certainly is irrelevant to any useful purpose, to connect this inability as an effect with any particular kind of insanity, whether expressed in common or technical language. Indeed to require a jury to infer explicitly unsoundness of mind from inability to manage affairs, which is of itself sufficient evidence of all the mental unsoundness, that is required for practical purposes, and reject their return if they do not, would seem, exceedingly puerile, were it not strictly professional."

Another instance, where the principles of common sense and common justice, which ought to regulate the legal relations of the insane, have been strangely disregarded in the maxims of the common law, is this: it requires that contracts to be valid, should spring from a free and deliberate consent, and yet it refuses to suffer the party himself to avoid them on the plea of lunacy, in accordance with an antient maxim, that no man of full age shall be allowed to disable or stultify himself; though, at the same time, it does allow his heirs, or other persons interested, to avail themselves of this privilege. Thus a person who recovers from a temporary insanity, before the return of an inquisition, has no remedy in law or in equity for the most ruinous contracts that he may have entered into while in that condition, except on the ground of fraud, though, after his death, his heirs may have them set aside by establishing the fact of lunacy alone.

Nearly the same respect for antiquated maxims is entertained in the application of the law to criminal cases. Lord Hale, in laying down the law in respect to criminal acts, divides insanity into two species, the partial and total; the former of which is not allowed to exempt from responsibility for crime. This distinction has been on some occasions acted on in our criminal courts. In the case of Bellingham, who shot Mr. Percival, the then Attorney-General said, "a man may be deranged in his mind—his intellects may be insufficient for enabling him to conduct the common affairs of life, such as disposing of his property, or judging of the claims which his respective relations have upon him, and if he be so, the administration of the country will take his affairs into their management, and appoint to him trustees;

but at the same time such a man is not discharged from his responsibility for criminal acts."

Lord Erskine had previously given the same doctrine the sanction of his authority in his celebrated speech in defence of Hadfield: "I am bound," he says, "to admit, that there is a wide distinction between civil and criminal cases. If, in the former, a man appears upon the evidence, to be *non compos mentis*, the law avoids his act, though it cannot be traced or connected with the morbid imagination which constitutes his disease, and which may be extremely partial in its influence upon conduct; but to deliver a man from responsibility from crimes, but above all from crimes of great atrocity and wickedness, I am by no means prepared to apply this rule, however well established, when property only is concerned."

That a person prevented by law from managing his own affairs, in consequence of impaired intellect, should, in respect to criminal acts, be held responsible, is a proposition so startling, that it is impossible to look on it in any other light than as belonging to that class of doctrines "which, while they may be the perfection of reason to the initiated, appear to be the height of absurdity to every one else."

Our author's animadversions on this piece of law, are so much in point, that we cannot refrain from giving them in his own words. "The language of the law virtually addressed to the insane man is, your reason is too much impaired to manage your property; you are unable to distinguish between those measures which would conduce to your profit, and such as would end in your ruin; and therefore it is wisely taken altogether from your control; but if, under the influence of one of those insane delusions, that have rendered this step necessary, you should kill your neighbour, you will be supposed to have acted under the guidance of a sound reason; you will be tried, convicted, and executed like any common criminal, whose understanding has never been touched by madness."

Another distinction made between civil and criminal cases, regards the evidence respecting the state of the party's mind. In the former, proof drawn from the nature of the act is paramount to all others, and, in the absence of others, is admitted to be conclusive; whilst in the latter, an attempt to prove insanity from the character of the act, would be looked on as a begging of the question, a regular running round in a circle.

In the trial of Hadfield, for shooting at the King in Drury-lane Theatre, the Attorney-general had told the jury that to exempt a person from criminal responsibility there must be a total deprivation of memory and understanding. To this Mr. Erskine, counsel for Hadfield, replied that, if the terms were to be understood in the literal sense, no such madness ever existed. He was the first lawyer, in an English court of justice, who laid it down that the true character of insanity, which would exempt from responsibility, was *delusion*, of which the criminal act in question must be the immediate unqualified offspring.

A doctrine laid down more than once, on the trials of insane persons for homicide, was, that if a person were capable, in other respects, of distinguishing right from wrong, there was no excuse for any act of atrocity, which he might commit under this description of derangement. Now, as the author well observes, the insane mind is not entirely deprived of the faculty of dis-

tinguishing right from wrong, but on many subjects it is perfectly rational, as is very well known.

"The first result, therefore, to which the doctrine leads, is, that no man can ever successfully plead insanity in defence of crime, because it can be said of no one, who would have occasion for such a defence, that he was unable in any case to distinguish right from wrong. To show the full merits of the question, however, it is necessary to examine more particularly, how far this moral sentiment is affected by, and what relation it bears to insanity. By that partial possession of the reasoning powers, which has been spoken of as enjoyed by maniacs generally, is meant to be implied the undiminished power of the mind, to contemplate some objects or ideas in their customary relations, among which are those pertaining to their right or wrong, their good or evil, tendency; and it must comprise the whole of these relations, else the individual is not sane on these points. A person may regard his child with the feelings natural to the paternal bosom, at the very moment he believes himself commanded by a voice from Heaven to sacrifice this child, in order to secure its eternal happiness, than which, of course, he could not accomplish a greater good. The conviction of the maniac's soundness, on certain subjects, is based in part on the moral aspect in which he views those subjects; for it would be folly to consider a person rational, in reference to his parents and children, while he labours under an idea that it would be doing God's service to kill them; though he may talk rationally of their characters, dispositions, and habits of life, their chances of success in their occupations, their past circumstances, and of the feelings of affection which he has always cherished towards them.

Before, therefore, an individual can be accounted sane on a particular subject, it must appear that he regards it correctly, in all its relations to right and wrong. The slightest acquaintance with the insane, will convince any one of the truth of this position. In no school of logic, in no assembly of the just, can we listen to closer and shrewder argumentation, to warmer exhortations to duty, to more glowing descriptions of the beauty of virtue, or more indignant denunciations of evil doing, than in the hospitals and asylums for the insane. And yet many of these very people may make no secret of entertaining notions utterly subversive of all moral propriety; and, perhaps, are only waiting a favourable opportunity to execute some project of wild and cruel violence. The purest minds cannot express greater horror and loathing of various crimes than madmen often do, and from precisely the same causes. Their abstract conceptions of crime, not being perverted by the influence of disease, present its hideous outlines as strongly defined as they ever were in the healthiest condition; and the disapprobation they express at the sight, arises from sincere and honest convictions. The *particular* criminal act, however becomes divorced in their minds from its relations to crime in the *abstract*; and, being regarded only in connexion with some favorite object, which it may help to obtain, and which they see no reason to retrain from pursuing, is viewed, in fact, as of a highly laudable and meritorious nature. Herein, then, consists their insanity; not in preferring vice to virtue, in applauding crime and ridiculing justice, but in being unable to discern the essential identity of nature, between a particular crime and all other crimes, whereby they are led to approve what, in general terms, they have already condemned."

We have cited this passage at full length, in the author's own words, as we consider that the absurdity of making the moral discernment of right and wrong in the abstract, a test of sane mind, could not be exhibited more clearly or more satisfactorily.

Another criterion of responsibility in doubtful cases is the design manifested in the commission of the criminal act. Those who see a proof of

the existence of insanity in the possession of systematic design must have made but little progress in the study of madness; any one acquainted with the inmates of lunatic asylums, must have often heard of the ingenuity of contrivance and adroitness of execution, which characterize the plans of the insane.

Having now demonstrated the fallacious nature of the two tests of responsibility just mentioned, namely, the power of discriminating right and wrong, and the power of design, the author comes to the consideration of the test proposed by Mr. Erskine, scil. *delusion;* the correctness and sufficiency of which, he says, would be unobjectionable, if our intellectual faculties alone were liable to derangement.

"But it must not be forgotten," he says, "that the Author of our being has also endowed us with certain moral faculties comprising the various sentiments, propensities and affections, which, like the intellect being connected with the brain, are necessarily affected by pathological actions in that organism. The abnormal condition thus produced, may exert an astonishing influence on the conduct, changing the peaceable and retiring individual into a demon of fury, or, at the least, turning him from the calm and quiet of his lawful and innocent occupations, into a career of shameless dissipation and debauchery, while the intellectual perceptions seem to have lost none of their ordinary soundness and vigor."

All this evidently involves the doctrine of moral insanity; a doctrine, by the way, which has been received rather unfavorably by judicial authorities, not certainly for want of sufficient facts to support it, but from the tendency of the mind to resist all innovations, which may at all come in collision with old and generally received prejudices. When this doctrine was advanced some time since in behalf of a person on trial for murder, it was denounced by the court as a "groundless theory."

"Such opinions," observes the author, "from quarters where a modest teachableness would have been more becoming than an arrogant contempt for the results of other men's inquiries, involuntarily suggest to the mind a comparison of their authors with the saintly persecutors of Galileo, who resolved by solemn statutes, that nature always had operated, and always should operate, in accordance with their views of propriety and truth."

The test of "delusion" then, in cases of doubtful insanity, is not much better than those already mentioned; nor is there any single, isolated character, which may not be equally objected to. Insanity is a disease, and, as with all other diseases, the fact of its existence is never established by a single diagnostic symptom, but by the whole body of symptoms. It is readily admitted by every one that the faculty of distinguishing the manifestations of health from those of disease requires tact, judgment, and experience; every one allows this in reference to the lungs, heart, liver, etc. Why not admit the same with respect to the brain? and much more readily too, in as much as from the very obscure nature, and in the ever varying phenomena of its functions, more tact, more knowledge is required, and consequently more difficulty is experienced in appreciating its several manifestations both in health and disease, than in the case of the other organs of the body. The lawyer, perhaps, will say that in arguing thus, we are setting up a barrier between the domain of professional knowledge and that of common sense; to which remark a very simple reply at once suggests itself; viz.

that when the lawyer is himself attacked, or has any friend for whom he is deeply interested attacked, with pulmonary, hepatic, or any other disease, he does not feel himself warranted in appealing to the common sense of some professional brother for the purpose of having the nature of his disease determined, and the proper treatment pointed out. What then does he do? He calls in the physician who has attained professional reputation for skill tact, and experience in treating the particular disease in question. What, we would say, is this, that facts, established by men of undoubted experience and good faith, should not be rejected as mere "groundless theory," because they happen to be novel, and to come in collision with the antiquated prejudices of professional routine, taken up without examination, and adhered to solely, because our predecessors acted on them. Common justice, common humanity, and the remonstrances of modern science will, however, no longer tolerate the employment of the argumentum ad verecundiam, that hackneyed and now justly despised weapon of obstinate bigotry in cases where the interests of so large a portion of our fellow-creatures are so deeply involved. That there are cases where we are compelled to rest satisfied with the argument of authority, we are free to admit; we deny, however, that the subject of insanity is one of these cases; knowledge on this subject is not at a standstill: our acquaintance with the nature, pathology, and treatment of this disease, is daily advancing; it is therefore but reasonable to expect that the legislative enactments regarding it, which should be made to conform to the nature of the disease, should also undergo those modifications suggested by the improvements in our knowledge of it.

It has been said that "all crime is the result of partial insanity;" and the inference intended to be drawn was, that partial insanity is no excuse for guilt. Here we have a precious instance of the confusion introduced into reasoning, when vague and ambiguous terms are employed; this frequently happens when the positive act, and its moral relation are designated by the same term, as here the term *crime* is obviously used to signify both the positive act of the individual, and the relation of that act to an established standard or law. Mr. Locke adduces the term *stealing*, if we forget not, in illustration of a similar confusion arising from ambiguity of terms, in his chapter on Moral Relations. The judge or jurist, who, for the purpose of establishing the inference, that insanity does not exempt from responsibility, lays it down that crime is the result of insanity, is himself involved in a glaring petitio principii by his using the term "*crime*," which in popular and general usage includes in it the idea of guilt.

But crime, in the strict and proper acceptation of the term, is not necessarily the result of insanity, even when perpetrated under the excitement of the most violent passions. Crime, to be crime, is always suggested by motives, insufficient it may be, but still rational motives, having reference to definite and real objects.

Violent passions may impair the judgment, but they do not vitiate the perceptions, nor deprive the mind of its power of comparison. But the case is very different in mental derangement.

"The causes which urge the insane to deeds of violence, are generally illusory—the hallucinations of a diseased brain—or they may act from no motive at all, solely in obedience to a blind impulse, with no end to obtain, nor wish to

gratify. Madness, too, is more or less independent of the exciting causes that have given rise to it, and exists long after those causes have been removed, and after the paramount wish or object has been obtained. In short, madness, is the result of a certain pathological condition of the brain, while the criminal effects of violent passions merely indicate unusual strength of those passions, or a deficient education of those higher and nobler faculties that furnish the necessary restraint upon their power. It is admitted that strong passions do deprive the individual of the power of calmly deliberating and perceiving the terrible consequences of his fury; and legislators have wisely distinguished it from deliberate, premeditated mischief, by uniting it with a minor degree of punishment. In drunkenness the same effect is produced to such a degree as to amount to temporary insanity; but neither does this, any more than strong passions, exempt from all punishment; for the plain reason, that, in each case, the impairment of moral liberty is the voluntary act of the individual himself."

According to the French penal code, if the existence of insanity is once established, the responsibility of the party is at once taken away. As it is not quite certain, however, that insanity under every form or circumstance whatever, ought to annul a person's criminal or civil liabilities, and moreover as allowing the court or jury any latitude on this point, would just be equivalent to having no law whatever on the subject, our author suggests that the mental unsoundness, in order to exempt from responsibility, should be required by the law to have embraced the criminal act within its influence. This would narrow the question for the jury and leave them merely the fact of insanity to determine.

As the decision of the jury, relative to the existence of insanity, must be based on the testimony of the witnesses adduced, it becomes a matter of great importance by whom this testimony is given. If the business of the witnesses on such occasions was to testify to a simple matter of fact, it might perhaps be of little consequence who these witnesses may be; but when we know that the chief business of such witnesses is to deliver opinions, which are to have the final decision, there should, as the author observes, be some qualification required on the part of those who give such opinions, not required of one who testifies to mere facts. If a particular class of men only are thought capable of treating insanity, it very naturally follows, as a matter of course, that such only are capable of giving opinions on judicial proceedings relative to insanity. To remedy the difficulties arising from the contradictory opinions so often given by medical men on trials relative to insanity, by which the minds of the jurors are so perplexed and confounded, the author proposes to appoint a class of men somewhat like the *experts* of the French, peculiarly fitted for the duty, by a course of studies expressly directed to this end.

To account for the little progress, comparatively speaking, made by medical men in the knowledge of insanity, some persons allege that the study of mental philosophy, or that of mind in the healthy state, which is necessary in order to have correct notions in its disordered condition, has been too much neglected. The author who, we strongly suspect, is an ardent disciple of Gall, thinks on the contrary, that the result in question has been owing to the undue account that physicians have made of the popular philosophy of mind in explaining the phenomena of insanity, and that they have failed in consequence of studying metaphysics too much instead of too little. He conceives that the science of metaphysics, as we now have it, is utterly in-

competent to furnish a satisfactory explanation of the phenomena of insanity and that a more deplorable waste of ingenuity can scarcely be imagined, than that evinced in the modern attempts made to reconcile the facts of the one with the speculations of the other. In proof of his assertion he instances the case of monomania, the existence of which, as a distinct form of mental derangement, was denied, and considered to be a mere fiction of medical men, long after it had been admitted among the established truths of science. How far the author may be correct in these, his views, regarding the detrimental influence of metaphysics, and the paramount utility of phrenology, we shall not stop to consider.

The author having thus far presented the reader with some general views regarding the legal relations of the insane, and the nature and extent of their responsibility in civil and criminal matters, having pointed out also what he conceives to be the cause of the little progress hitherto made in our knowledge of the nature and treatment of mental derangement, now proceeds to enter into a more systematic and detailed account of his subject; he first commences with the consideration of:—

MENTAL DISEASES IN GENERAL.

He assumes as an undoubted truth, what very few will at the present day be found to deny, that the manifestations of the intellect, and those of the sentiments, propensities, and passions, or generally, of the intellectual and affective powers, are connected with, and dependent on the brain; he then infers that abnormal conditions of these powers are equally connected with abnormal conditions of the brain. The truth of this inference has been actually established by post-mortem examinations, deviations from healthy structure being generally found in the brains of insane subjects. A natural classification of the various forms of insanity, though of secondary importance in regard to its medical treatment, must prove of eminent service to the legal enquirer, by enlarging his notions of its phenomena, and enabling him to discriminate, where discrimination is necessary to the attainment of important ends. The deplorable consequences of knowing but one kind of insanity, and of erecting that into a standard, whereby every other is to be compared and tested, are too common in the records of criminal jurisprudence; and it is time, observes the author, that it were well understood, that the philosophy of such a method is no better than would be that of the physician who should recognize no diseases of the stomach for instance, but such as proceed from inflammation, and reject all others as anomalous or unworthy of attention. The various diseases included under insanity admit of being divided under two heads, founded on two very different conditions of the brain; the first being a want of ordinary development, the second some lesion of structure subsequent to its development. Under the former head he places idiotcy and imbecility, under the latter, mania and dementia. He adopts, in fact, Esquirol's division, for a full analysis of which excellent work we beg to refer the reader to some of the preceding numbers of this Journal; we shall therefore proceed to that part of the work where the author lays down "the legal consequences of mental deficiency."

"Our moral and our intellectual constitution is constructed in harmony with the external world on which it acts, and by which it is acted upon: the result of this mutual action being the happiness and spiritual advancement of an immortal being. Thus endowed with the powers of performing the part allotted us, and placed in a situation suitable for exercising and developing them, we become accountable for the manner in which they are used. All legal responsibility, therefore, is founded on this principle of adaptation, and ceases whenever either of its elements is taken away. The intellect must not only be sufficiently developed, to acquaint the individual with the existence of external objects, and with some of their relations to him, but the moral powers must be sound enough and strong enough to furnish, each its specific incentives, to pursue that course of conduct, which the intellect has already pointed out. It is nothing that the mind is competent to discern some of the most ordinary relations of things, and is sensible of the impropriety of certain actions; so long as the individual is incapable, by defect of constitution, of feeling the influence of those hopes and fears, and of all those sentiments and affections that man naturally possesses, an essential element of legal responsibility is wanting, and he is not fully accountable for his actions."

The author first considers the case of imbeciles; he shows the absurdity of making such persons responsible for their actions in the same degree as one enjoying the full vigour and soundness of the higher faculties; because an essential element of responsibility is a power to refrain from evil doing, which power is furnished by the exercise of those faculties, which are but imperfectly, if at all, developed in the imbecile. The acts of the imbecile, for want of the nobler faculties, are contemplated by him solely in relation to himself; he never for a moment considers the consequences of such acts in relation to others. It is no easy matter to satisfy many persons, however, that an invidual who labours under no delusion, and who enjoys a certain degree at least of moral liberty, should not be held responsible for his acts. This error arises from the vulgar habit of estimating the strength and extent of the moral faculties by the ability to go through certain mechanical duties with tolerable success.

The author here cites several cases in illustration of his views on the nature of imbecility, which want of space obliges us to pass over.

On the subject of moral mania, and the responsibilities of those labouring under that form of insanity, our author has been peculiarly felicitous. Moral mania is a matter looked on as visionary even at the present day in criminal courts, when urged in defence of the insane. It has been too much the custom to limit the influence of insanity solely to the intellectual faculties. Surely no one will deny that the propensities and sentiments are as much integral portions of our mental constitution as the intellectual faculties, and that their manifestations are just as much dependent on the cerebral organization. To Pinel the world is indebted for first directing attention to the existence of moral mania, as a distinct form of disease. Before his time, it was the universal belief that insanity was always an affection of the reasoning or intellectual powers. On examining closely among the patients at the Bicetre, he found that there were many maniacs, who evinced no lesion whatever of the understanding, but were under the dominion of instinctive fury. The reality and importance of this distinct form of insanity is now recognized by several practical observers of the present day; they do not all, however, appear to concur with Pinel in thinking, that the integrity of the understand-

ing is so fully preserved as he supposed. It has been observed that there is a great tendency in this affection to pass into the state of intellectual mania; some even go so far as to consider the former as belonging to the initiatory stage or incubation of the latter.

A very common feature of moral mania is a deep perversion of the social affections, whereby the feelings of kindness and attachment that flow from the relations of father, husband, and child, and replaced by a perpetual inclination to teaze and embitter the existence of others. This affection is far more common in the ordinary walks of society than is generally supposed. It is generally set down to eccentricity of temper, or inherently vicious dispositions. In such persons the suspicion of insanity is immediately dispelled by calling to mind the general correctness of their views, and the steadiness and sagacity with which they pursue their daily avocations. The consequences of these erroneous opinions are sometimes strikingly exhibited when a person thus afflicted becomes the object of a legal procedure. Whilst he may be described by one, as acute and methodical in his business, and rational in his discourse, and believed to be perfectly sane, another will testify to the strangest freaks that ever a madman played, and thence deduce the conviction of his insanity; while one represents him, as, social and kindly in his disposition, ready to assist and oblige, and to accommodate himself to the varying humors of those about him, it will be testified by another that in his domestic relations, his former cheerfulness has given way to gloom and moroseness, that equanimity of temper has been replaced by frequent gusts of passion, and that the warm affections which spring from the relations of parent and child, husband and wife, have been transformed into indifference and hate We shall now pass on to the legal consequences of mania.

LEGAL CONSEQUENCES OF INTELLECTUAL MANIA.

We have already seen that the common law relating to insanity is open to censure as well on account of the manner in which it modifies the civil and criminal responsibilities of the lunatic, as of the looseness, inconsistency, and incorrectness of the principles on which the fact of the existence of the disease is judicially established. The disabilites it imposes on the insane are founded no doubt on the most humane and enlightened views; it being certainly an act of the greatest mercy to incapacitate a person from making contracts, &c. who has lost his natural power of discerning and judging. These civil disabilities are not incurred however, by every one labouring under mental derangement; the measure of insanity necessary to produce this effect is a question reserved for judicial investigation, the result of which will no doubt depend on the views of individuals relative to the effect of insanity on the mental operations, and to the respect due to opinions and decisions already promulgated. General intellectual mania, or that form involving all or most of the operations of the understanding, should be attended to in the fullest extent, by the legal consequences of insanity; whilst partial intellectual insanity does not necessarily render a person non compos. With respect to the question, when mania invalidates a person's civil acts

and annuls criminal responsibility, there has been much discussion, nor are there any general principles as yet established on the subject.

We know from experience that, notwithstanding the serious derangement of the reasoning power which a person must have experienced, who entertains the strange fancies that sometimes find their way into the mind, it may be exercised on all other subjects, so far as we can see, with no diminution of its natural soundness. To deprive such a person of the management of his affairs, or to invalidate his contracts, would be to inflict a certain and serious injury. The principle which our author would inculcate on this point is, "that monomania invalidates only when such act comes within the circle of the diseased operations of the mind." This principle would certainly be of easy application, if the insane delusion never varied; for then all we should have to do, would be to ascertain what the delusion is, and then determine whether the act in question comes within its influence. But unfortunately for the adequacy of this rule, the delusion is frequently changing, in which case it is not only difficult to determine how far it may have been connected with any particular act, but the mind, in respect to other operations, has lost its original soundness, to such an extent that it cannot be trusted in the management of important concerns. All we can do then is, in doubtful instances, to be governed by the circumstances of the case, a course which seems far more rational than the practice of universal disqualification.

The author mentions one case, to which he thinks that his principles will not apply, and that is in determining the validity of a marriage contracted in a state of partial insanity. Here, he says, it is not sufficient to consider merely the connexion of the hallucination with the idea of being married, nor should he form any conclusion in favor of the capacity of the deranged party, from the propriety with which he conducts himself during the ceremony. In other contracts, all the conditions and circumstances may be definite and brought into view at once, and the capacity of the mind to comprehend them determined with comparative facility; whilst, on the contrary, in the contract of marriage, nothing is definite, the obligations which it imposes are of an abstract kind, and constantly varying. With respect to the principles that should regulate the legal relations of the partially insane, our author lays it down that, "whilst they should be left in possession of every civil right, that they are not clearly incapable of exercising, they should be subjected to the performance of no duties involving the interests or comfort of individuals, which may be equally well discharged by others." For this principle he states what we conceive a very sound reason, viz. that in the former instance we continue the enjoyment of a right that has never been abused; while in the latter, we refrain from imposing duties on persons not qualified to perform them.

In criminal, as well as in civil cases, it is important to consider the operation of the predominant idea, and its influence on the act in question, as there is no good reason why a person should be held responsible for a criminal act that springs from a delusion which would be sufficient to invalidate any civil act to which it might give rise, as a monomaniac's sense of the *fitness of things* is not differed when he signs a ruinous contract, from what it is when he commits a criminal act. It is still a disputed point, whether partial mania should have the full legal effect of insanity, in crimi-

nal cases. Some writers will have it that the same principle which determines the effect of mania in civil, should also determine its effect in criminal cases; that is, that criminal responsibilty should be annulled only when the act comes within the range of the diseased operations of the mind. In favor of this view, it may be urged that the connexion of the morbid delusion with the criminal act is generally very direct. Against this view it may be objected, that it is not always easy to trace the connexion between the predominant idea and the criminal act. The links which connect the thoughts that arise in succession in the sound mind, defy all our penetration, and the few laws we have established are totally inapplicable to the asscociations of the insane mind. Another objection to this view is, that the predominant idea is sometimes frequently changing, and at other times concealed by the patient.

Hoffbauer not only limits the exculpatory effects of partial insanity, to the acts which clearly come within its influence, but has laid down the principle, that in the criminal jurisprudence of this state, the predominant idea should be considered as true; that is, that the acts of the patient should be judged as if he had really been in the circumstances he imagined himself to be when they were committed. This is obviously based on the common, but erroneous maxim, that madmen reason correctly, but from wrong premises; we know, however, that there are numerous instances wherein the premises and conclusions are all equally erroneous. In the courts of justice in this country, there has been a great diversity of practice on this subject. Under the influence of Lord Hale's doctrines, partial insanity has seldom been considered as sufficient per se, to annul responsibility for crime; and when it has, it is generally in cases where the principal delusions were of a religious nature. We find that our analysis of this work has run out to so great a length that we must close it here; not, however, without expressing our decided approbation of the book. We recommended a careful perusal of it both to our medical and legal friends. The latter class of readers will see that there are certain points, even in the judicial discussions on insanity, where they would do well to consult something more defined than mere common sense.

The Discovery of the Vital Principle; or the Physiology of Man. 8vo. 566. London, 1838.

The present century will certainly be distinguished in the annals of the human mind. Every science and every art has received in it an impulsion which is rapidly hurrying it forward—the elements of political and social life have been analysed, and are in process of recombination—and, finally, the vital principle, the grand secret, is discovered.

Genius is proverbially modest. If a man invents a new tooth-powder, nay, if he gives only a new designation to an old one, he sets his name to the thing forthwith, and affects to consider immortality certain. But the discoverer of the vital principle is nameless. We see him not in the title-page, we seek him in vain in the preface, and we abandon in despair the

search for his whereabouts. The discovery, however, will itself be a reward, more substantial and more glorious than the beggarly fame that waits on the breath of the million—a fame that is prostituted for the panders to their pleasures, or the destroyers of their kind.

It would be a waste of time to dwell on the importance of a knowledge of the Vital Principle. Common sense proclaims it. But it seems that that knowledge is peculiarly necessary now. Horrors are hanging over us, and there is something awfully significant in these hints:—

"The period however, has arrived in which this truth must be developed! Real knowledge always progresses with necessity, and the elucidation of the vital principle has now become essential to the wants of mankind; for, while we continue unacquainted with the origin of life, what effectual step can be taken to prevent the incursions of disease and death, so unusually prevalent in the present day? On the explanation of the vital phenomena, and general diffusion of physiological knowledge, will be found to depend the preservation of the entire human species." *Pref.* vi.

If this does not awaken attention we know not what will rouse people. We have been sleeping on a volcano. How grateful we should be to the gentleman before us. Would that we could call him by his name.

Perhaps there are few terms more used in medicine than "vital principle." "vital action," "vital laws." If there is a difficulty, they give us the solution—if a thing is incomprehensible, the laws of vitality explain it. The vital principle is, like Cerberus, "three gentlemen at once," and does all sorts of work for all sorts of people.

It may be doing a service to medicine, to lay before the profession a few of the leading notions on the nature of vitality. Those who make liberal use of the term, would be puzzled, perhaps, were they put in a corner, and asked to state exactly what they meant. Before, then, we announce the discovery of the genuine vital principal, the real Simon Pure, we will introduce a few of the sham ones.

1. *John Hunter's idea of Life.*—It is generally supposed that Hunter's vital principle is, like the "delicate Ariel," something very spiritual indeed. There cannot be a greater mistake, as the followlng passage from his work on the blood, which supplies us with his views in detail, will shew.

"This living principle in the blood, which I have endeavoured to show to be similar in its effects to the living principle in the solids, owes its existence to the same matter which belongs to the other, and is the materia vitæ diffusa, of which every part of an animal has its portion:* it is, as it were, diffused through the whole solids and fluids, making a necessary constituent part of them, and forming with them a perfect whole; giving to both the power of preservation, and the susceptibility of impression, and, from their construction, giving them consequent reciprocal action. This is the matter which principally composes

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* "I consider that something similar to the materials of the brain is diffused through the body, and even contained in the blood; between this and the brain a communication is kept up by the nerves. I have, therefore, adopted terms explanatory of this theory; calling the brain the materia vitæ coacervata; the nerves the chordæ internunciæ; and that diffused through the body the materia vitæ diffusa."

the brain; and where there is a brain there must necessarily be parts to connect it with the rest of the body, which are the nerves; and as the use of the nerves is to continue, and therefore convey, the impression or action of the one to the other, these parts of communication must necessarily be of the same matter; for any other matter could not continue the same action.

From this it may be understood that nothing material is conveyed from the brain by the nerves, nor, *vice versa*, from the body to the brain; for if that was exactly the case, it would not be neceesary for the nerves to be of the same materials with the brain: but as we find the nerves of the same materials, it is a presumptive proof that they only continue the same action which they receive at either end.

The blood has as much the materia vitiæ as the solids, which keeps up that harmony between them; and as every part endued with this principle has a sympathetic affection upon simple contact, so as to affect each other, (which I have called contiguous sympathy,) so the blood and the body are capable of affecting and being affected by each other; which accounts for that reciprocal influence which each has on the other. The blood being evidently composed of the same materials with the body, being endued with the same living powers, but from its unsettled state having no communication with the brain, is one of the strongest proofs of the materia vitiæ making part of the composition of the body, independently of the nerves, and is similar in this respect to those inferior orders of animals that have no nerves, where every other principle of the animal is diffused through the whole. This opinion cannot be proved by experiment; but I think daily experience shows us that the living principle in the body acts exactly upon the same principle with the brain. Every part of the body is susceptible of impression, and the materia vitæ of every part is thrown into action, which, if continued to the brain, produces sensation; but it (the materia vitiæ) may only be such as to throw the part impressed into such actions as it is capable of, according to the kind of impression; so does the brain or mind. The body loses impression by habit, so does the brain; it continues action from habit, so does the brain. The body, or parts of the body, have a recollection of former impressions when impressed anew; so has the brain: but they have not spontaneous memory as the brain has, because the brain is a complete whole of itself, and therefore its actions are complete in themselves. The materia vitæ of the body being diffused, makes part of the body in which it exists, and acts for this part, and probably for this part alone. The whole, taken together, hardly makes a whole, so as to constitute what might be called an organ, the action of which is always for some other purpose than itself: but this is not the case with the brain. The brain is a mass of this matter, not diffused through anything for the purpose of that thing, but constituting an organ in itself, the actions of which are for other purposes, viz. receiving by means of the nerves, the vast variety of actions in the diffused materia vitæ which arise from impression and habit, combining these, and distinguishing from what part they come. The whole of these actions from the mind, and, according to the result, react so as to impress more or less of the materia vitæ of the body in return, producing in such parts consequent actions. The brain, then depends upon the body for its impression, which is sensation, and the consequent action is that of the mind; and the body depends upon the consequence of this intelligence, or effect of this mind, called the will, to impress it to action; but such (sensation and action) are not spent upon itself, but are for other purposes, and called voluntary."

John Bell sarcastically remarked that "a mouthful of nonsense in latin" sounds infinitely better, than in the mother tongue. The "diffused *matter of life*" of John Hunter, looks awkward in English. But what shall we say when we are told that it is something like brain? We may imitate Polonius'

polite acquiescence with Hamlet, when the prince told him that the cloud was "like a camel"—"It *is* backed like a camel."

We should perhaps admire Hunter's notions more, if they possessed the merit of intelligibility. As they stand they seem, to vulgar eyes, to be inconsistent where comprehensible, and rather rhapsodical where incomprehensible, that is, in about four-fifths of their extent.

Hunter, for example, says that the living principle "principally composes the brain," and that the nerves are necessarily of the same matter. But as the blood has the living principle, that is a strong proof that the materia vitæ makes part of the composition of the body, independently of the brain and nerves. This appears very odd on the part of the living principle, for, if the brain and nerves are principally composed of it, there seems no necessity for its additional dissemination. Mr. Hunter, too, informs us that the living principle in the body acts on exactly the same principle as the brain. So, here is a principle which makes a great part of a particular organ, and which seems identified, in Hunter's idea, both with the *composition* and the *action* of that organ, operating just like another principle, universally diffused yet in no other associated with such visible organization. This is undoubtedly very beautiful, but rather mysterious. The account of the diffusion of the materia vitæ is a fine piece of *chiaro-scuro*. Few exceed Hunter in this sort of thing. The passage is like the speech in Don Juan:—

> "A good sample, on the whole,
> Of rhetoric, by the learn'd call'd rigmarole."

Our poor faculties are left, we confess, at a humble distance, in this excursion of Hunter's genius. We are ashamed to say, that his meaning and his logic are equally beyond us.

Yet one thing does seem clear. If words go for any thing. Hunter tells us that the materia vitæ diffusa is "the matter which principally composes the brain." The whole gist of his argument, if argument such a rhapsody can be termed, goes to prove the analogy between the living principle and the brain. If this is not materialism, what is? Fortunately the bane is rapidly succeeded by the antidote, and the very next paragraph knocks the materia vitæ on the head.

> "But mere composition of matter does not give life; for the dead body has all the composition it ever had. Life is a property we do not understand; we can only see the necessary leading steps towards it."

It is a pity that Mr. Hunter did not start with this. Had he only placed it before his theory of the materia vitæ, instead of after it, much trouble would have been spared to himself and to his readers. It contradicts point blank all that went before it. This mode of reasoning, though convenient in some respects, is open to some objection. It is difficult to know exactly what the author means, when he makes two assertions opposed to one another; and when he first explains a thing and then says it is inexplicable, we are tempted to inquire why he went to the pains of explaining it.

Mr. Hunter, however, has not done yet. The last paragraph left him asserting positively that mere composition of matter does not give life. In another place he goes even farther than this:—Organization and life," he says, "do not depend *the least* on each other." This is pretty well—

vitalism run mad. But he sticks to it, for he declares that "organization and life are two different things." The materia vitæ diffusa is left in the lurch altogether, and no one would dream, from these expressions, that Mr. Hunter could have fathered that grown material bantling.

But alas! this spiritualism was not deeply rooted in the mind of Hunter, and another material theory, different indeed from the "diffused" one, has issued from his physiological loins.

"Life, then, appears to be something superadded to this peculiar modification of matter; *or* this modification of matter is so arranged that the principle of life arises out of the arrangement; and this peculiar disposition of parts may be destroyed, and still the modification from which it is called animal matter remain the same. If the latter be the true explanation, this arrangement of parts on which life should depend, would not be that position of parts necessary to the formation of a whole part, or an organ, for that is probably a mechanical, or at least an organical arrangement; but just a peculiar arrangement of the most simple particles, giving rise to a principle of preservation....the arrangement for preservation, which is life, becomes the principle of action, not the power of action....We have hitherto traced animal matter from its change from common matter to animal matter, the particles of which have possessed such an arrangement as to produce life."

Here life depends on the arrangement of the molecules. This is the common material doctrine. We shall shew, by-and-by, its fallacy; but it it is evident that Hunter entertained it.

Neither vitalists nor materialists can appeal to John Hunter, or rather they may both do so. He has expressed all opinions, pleaded in a sorry fashion for all, and proved none. As an *argument* his reasoning is scarcely worth examination,—it is illogical, inconsistent, and hopelessly obscure; and his three contradictory assertions, each unqualified, do not leave him the merit of having discovered or announced truth, although he was unable to establish it.

Mr. Lawrence's Theory of Life.—This witty surgeon and able man, had a keen relish for the weaknesses of his predecessors or his peers, and he seldom scrupled to shew them up.

"The striking differences," so he spoke in the Theatre of the College of Surgeons, "between living and inorganic bodies, and the strong contrasts of their respective properties, naturally excited curiosity respecting the causes of this diversity, and endeavours to shew the mode in which it was effected. Here we quit the path of observation, and wander into the regions of imagination and conjecture. It is the poetic ground of physiology; but the union is unnatural, and, like other unnatural unions, unproductive. The fiction spoils the science, and the admixture of science is fatal to inspiration. The fictitious beings of poetry are generally interesting in themselves, are brought forward to answer some useful purpose; but the genii and spirits of physiology are awkward and clumsy, and do nothing at last, which could not be accomplished just as well without them; they literally incumber us with their help.

For those, who think it impossible that the living organic structures should have vital properties without some extrinsic aid;—although they require no such assistance for the equally wonderful affinities of chemistry, for gravity, elasticity, or the other properties of matter, a great variety of explanations, suited to all tastes and comprehensions, has been provided."

Some are contented with stating that the properties of life arise from a vital principle. This explanation has the merit of simplicity, whatever we may think of its profoundness: and it has the advantage of being transferable and equally applicable to any other subject. Some hold that an immaterial principle, and others, that a material, but invisible and very subtle agent, is superadded to the obvious structure of the body, and enables it to exhibit vital phenomena. The former explanation will be of use to those who are conversant with immaterial beings, and who understand how they are connected with, and act on, matter. But I know no description of persons likely to benefit by the latter. For subtle matter is still matter; and if this fine stuff can possess vital properties, surely they may reside in a fabric which differs only in being a little coarser."

Mr. Lawrence makes small bones of the vital principle. He is merry at the idea of its being immaterial, and almost as merry at the notion of its being something superadded to the organs, material in its nature, but more subtle than ordinary matter. These doctrines may be false, but we do not think them so ridiculous, as Mr. Lawrence would have them. Their absurdity hinges on their inconsistence with what we know. But do we know the properties of matter? do we know the constitution of the universe, so well as to erect that knowledge as the standard of unerring truth, and to measure the more recondite operations of Nature, by the acquaintance we possess with her coarser works? The force of the argument, and the justice of the sarcasm of Mr. Lawrence, hinge on the determination of this question; and perhaps in his wide acquaintance with biology, he has been enabled to determine it. For our own parts, we confess that our philosophy is less strong upon the wing, and while her feeble flights may have instructed us to doubt, they have not given us confidence to dogmatise. We are of the opinion of Horatio, and fancy there are "more things in Heaven and earth," than we have yet attained to dreaming on.

Fortunately Mr. Lawrence does not limit his efforts to the demolition of the hypothesis of others. He imitates the Brahminical Cosmoginists, and feeling that the world is insecurely poised on the back of an elephant, he puts that elephant upon a tortoise.

"To call life a property of organization would be unmeaning:—it would be nonsense. The primary or elementary animal structures are endued with vital properties, their combinations compose the animal organs, in which, by means of the vital properties of the component elementary structures, the animal functions are carried on. The state of the animal, in which the continuance of these processes is evidenced by obvious external signs is called life."

It is, no doubt, absurd to affirm that life is the result of organization, for life precedes the existence of organs. But how come the primary structures endowed with life? Here is the physiological tortoise. It carries the elephant tolerably well, but we see nothing to support *it*. If we can get the primary structures endowed with life, the rest is all smooth sailing. The difficulty is in the endowment. If we look at the germ, it is yet an amorphous mass. But it is alive, and from simple substance are gradually envolving those proximate elements which form the materials of the tissues and the organs. To say that those elements are endowed with life, is to say no more, as a matter of fact, than what is obvious and palpable; and, as a theory of rational causation, to say nothing at all.

Theory of Life of Tiedemann, Treviranus, and of the Modern German School.—In the physiology of Tiedemann, the source and nature of the vital powers are considered rather in detail. Our readers may naturally anticipate much from the industry and profundity of the German School. They will presently perceive to what the researches of this School have led.

Tiedemann first shews the opposition of vital and chemical laws—the peculiarity of composition of organic matters—and the necessity of a special force to produce them.

"The principal result," he goes on to remark, "of the comparisons made between the composition of organic bodies and those of inorganic bodies, which comparisons are founded on observations and researches in the chemical composition of these bodies hitherto pursued, is that the former have peculiar matters, which we call organic, for their basis. The changes of composition which take place in bodies endued with life, are not simply the effects of affinities similar to those observed in brute or inorganic bodies; they are the effects of affinities and forces of a special nature. Organic matters are the only ones which exhibit, and for the greater period of time in a particular state of aggregation and form called organization, the manifestations of activity which we designate by the name of life. They are accumulated at one time in bodies actually living, and life is manifested in them; at other times they are exterior to living bodies, mixed with inorganic matters, and then only capable of living. In this latter state they may return to the domain of living bodies, and into the tide of life, either in the shape of aliments, or, in a direct manner, by the aid of certain circumstances, as happens in spontaneous generation. Purely chemical affinities, or the action of simple chemical forces, appear, in the present state of our planet, to produce no organic combination of matter, such as albumen, gelatin, starch, gluten, &c.; at least we possess no facts which go to support the contrary opinion. None but organic bodies themselves are capable of introducing inorganic matters into organic combinations, of which respiration in particular and the nutrition of plants are examples."

This is a sufficiently distinct admission of the existence of a special something, call it by what name we choose. It signifies little whether that name be vital principle, organic force, or any other designation—whether we suppose it immaterial, or subtly material. It is of a special nature, and so far from being the result of organism, its operation is necessary for the constitution and existence of organic matter. But M. Tiedemann proceeds:—

"If we extend our researches still further, a question presents itself, namely, how organic matters, their different combinations and living bodies, are formed in our planet? The solution of this problem passes the limit of our experience. Should we, however, wish to hazard an answer to it, we fall into the waste of conjecture, and are forced to erect hypotheses, which are but probable, and not at all certain. We suppose that organized bodies have existed in our planet from its commencement; or else we admit that organic matters and living bodies have been produced, under certain circumstances, together with the elements and inorganic matters, by the action of general physical causes; or, lastly, we conjecture that the substance of living bodies was primitively contained in water, as primitive organic matter, having the property of taking on the organic form, that it gave origin to organic bodies of very simple and varied kinds in consequence of circumstances, and that these bodies have passed successively to more complicated forms, until at length the generative organs and their manifestations of activity having appeared in them, they were endowed with the

faculty of preserving themselves in a continuous manner, by means of generation, as separate species."

There is one hypothesis, that has at least some faint probabilities upon its side, to which M. Tiedemann does not even deem it necessary to allude —the hypothesis which accounts for the existence of animals by the will of a Creator. The modern Pantheists scout the idea. They see nothing but absurdity in the supposition of a Great First Cause, they deem the belief in a Deity as unfit to be even entertained by their philosophy, and they substitute in his place that most extravagant of all superstitions, that most grovelling of all religions—the self-created, self-endowed, and self-creating powers of Nature. The attributes of a Deity are reconcileable with common experience, and consistent with our ordinary knowledge of events. But this Pantheistical jargon is opposed in its essential features to all experience, and, while it professes to be the rational offspring of scepticism, it is really an encephalous monster, got from a heated imagination by credulity.

But let Pantheism speak for herself. Far be it from us to gag her mouth, and, if her cause is good, and her arguments are strong, if Truth be on her side and Reason her champion, Prejudice however lusty, Error however consecrated by the respect of ages, will ultimately quail before her.

"Geology," proceeds Tiedemann, "is opposed to the first hypothesis of the existence, in our planet, of living bodies from the first moments of its creation. Fossils are found only in the exterior crust, that is to say, in the superficial layers of the earth, the formation which is most recent, whilst there are none at all in the primitive earths. Consequently there was a time when no living being existed on the globe. Even supposing we admitted this hypothesis, we should still leave untouched the question, how living bodies were formed, inasmuch as we could say nothing concerning the mode of origin of our planet and of the bodies which constitute it. In reference to this question, it matters little whether we declare for vulcanism or neptunism, since the geologists are under the necessity of leaving the origin of fire and water without explanation, and the biologist is still less able to pronounce any opinion on that of living bodies.

The difficulties which occur in the second hypothesis, of the dependence of the production of organic matters and living bodies on the action of general physical forces, are, that we are actually in want of facts which would authorize us to conclude analogically that organic matters and living bodies can proceed from inorganic matters, never having observed any thing similar, at least up to this day. Far from this being the case, living bodies are unable to produce with inorganic substances, the greater number of the materials which enter into their composition, and for such end they require the matter of other organic bodies, which they introduce into themselves. Plants are nourished principally by the remains of dead vegetables or animals: animals likewise preserve their existence by means of vegetables, and even of other animals.

The most probable hypothesis is the third, viz., that the substance of organic bodies existed primitively in water, as matter of a particular kind, and that it was there endowed with the plastic faculty, that is to say, with the power of acquiring, by degrees, different simple forms of living bodies, with the concurrence of the general influences of light, heat, and perhaps also of electricity, &c. and of then passing from the simple forms to other more complicated, varying in proportion to the modification occurring in the external influences until the point when each species acquired duration by the production and manifestation of activity of the genital organs. Although we cannot here also answer the question, whence came the water and the organic matter which it contained, yet this hypothesis is the one which accords best with the facts with which

geology has latterly been enriched. In fact, we find no organized bodies belonging to what is called the primitive world in the strata of earths which modern geologists consider as the products of fire or of vulcanism. They are only observed in the upper layers of the earth, in those of the latest formation, and in the soils which have evidently been precipitated in the midst of the waters. Aquatic animals existed before terrestrial animals. An argument which favours the hypothesis according to which the organic kingdom has been gradually developed and elevated from simple to more complicated forms, is drawn from the fact that we meet with remains of organic bodies belonging to the most simple species in the secondary and more ancient soils, whilst the most recent strata of the earth contain the remains of more complicated living bodies. The soils which rest directly on primitive rocks, present fragments of corals, radiated animals, and shells. It is only after these that remains of vertebrated animals fishes, reptiles, and cetacea are found in the water. Fossil bones of oviparous animals exist in the deep strata of the earth, whereas the viviparous mammiferæ are met with in the superficial layers. We observe the same in the organic complication of vegetables, whose remains are contained in the different layers of the earth. Impressions of cotyledonous plants, especially of ferns, are the first vegetable traces met with in the deep-seated strata. Then come the remains of monocotyledonous plants, of aborescent gramina, of palms, &c. and finally those of the coniferæ and other dicotyledonous plants.

There have not yet been found any fossils belonging to apes or man, whose organization has reached the highest degree of complication and development. We may therefore admit, with great probability, that apes and men are the last and the newest products of our planet."

We have allowed Pantheism to plead her cause, and the issue is now before the tribunal of science. If she is creditable, organic matter diffused in water had inherently a plastic power, by which it developed itself from simpler forms to higher, until the generative organs were obtained, and the forms then reached were ever after perpetuated!

We say nothing of the absence of proof of any plastic power of the sort. That must be taken for granted. But granting it, when and why did such power cease? If it existed at all, it was inherent—if it was inherent, it must exist still—if it still exists it must be capable of observation, of examination, of demonstration. But who ever observes, examined, or can demonstrate anything approaching to it?

The Pantheist may reply:—"This plastic power, in which I demand a blind belief, worked till it produced the generative organs and then ceased. It had accomplished its mission, or rather had affected its intention, and though I laugh at the idea of intelligence in your Deity, you must assent to its operation in mine. My plastic power of organic matter first worked that matter into a zoophyte. From the zoophyte it developed itself into an articulated animal. It next grew a mollusk—a fish—a reptile—a bird—a mammal—and the hydra viridis was but the inceptive of a man—a man the completion of a hydra viridis. Through each successive step my plastic power went, and, when it got to man it stopped. Suddenly all the creatures below him, and at the same instant himself, were provided with genital organs and a pair of each creatures was at once transformed by the magic wand of my plastic power into male and female."

Such is the ingenious theory of Pantheism. We ask not *how* these genital organs, which were to extinguish the plastic power came to be its "crowning mercy." But for the hypothesis to be correct, it is obvious that

the earlier creatures *must have been unprovided with them.* If the earlier races had them, that ought from the very terms of the theory to have put a stop to the plastic business. Have the Pantheists proved that they had them not? Do they attempt to prove it? Are they not conscious that the very notion has only to be promulgated to cover them with ridicule? There is no proof, no probability, not the shadow of a shade of likelihood that the very earliest creatures who sprang into existence in the infant world, did not perpetuate their like, as their descendants do, and gradually stocked the waters with their offspring, just as any modern zoophyte, or mollusk may.

Such is the baseless fabric of the supposition (we can hardly dignify it by the name of scientific theory) that a plastic power operated, till it effected organs of generation. and then nobly committed felo-de-se. But there is another term in the proposition, another conditon of its truth, which we may as well dissect, and expose the real nature of. For that proposition to be true, it is not only requisite that the generative apparatus should have lain in abeyance until the present scheme was arrived at, but it is also requisite that the animals which existed in the younger world should be *inferior in organization, and less perfect in development, than those which are found at present.* Is this the case? Is the animal icognitum, is the mammoth, are the mollusca instances of such a fact? They are notoriously the contrary. They are as perfect samples of their class as any mollusk, reptile, or mammal of our day, and to suppose that these are developed from those, is to fly in the face of consistency and science.

We need not pursue this childish folly farther. It is opposed to all experience, to probability, to reason; and the man who can reject the simple doctrine of a God and a creation, for this godless, self-existing, self-destroying, self-contradicting, senseless, aimless crotchet, must be the most credulous slave to superstition that ever formed the raw materials of a lunatic.

Contrast it with the creed of a believer in the Deity:—*that* the world in its infancy presented important differences of condition from its present—*that* it was stocked by the all-wise Creator with animals adapted to its state—*that* one, perhaps more than one, revolution occurred in its constituent parts—*that* with the change of circumstances in their situation, the same Creator willed new beings to inhabit it—and *that*, so far as our knowledge reaches, the earlier creatures and the old, had similar laws of organization and of reproduction.

We ask, and we ask with confidence, which doctrine—Theism or Pantheism—draws least upon our faith, squares best with what is known—which doctrine demands most abasement of reason; breeds most superstition? For ourselves we do not scruple to pity the Pantheist, as the most credulous of Pagans, the most abject worshipper of effects—the visible phenomena of Nature.

It has been supposed that minute anatomical knowledge, and that deep physiological researches incapacitate for general ideas of magnitude, and, as in the analogous case of law, confine and cripple the mind to precedents, and to the close and foggy atmosphere of what is demonstrable immediately around it.

The samples we have offered might countenance the supposition. Were it true, anatomy and physiology would be indeed degraded. But it is not true.

The progress of Science dispels the errors which herself created, and if Hunter, and Lawrence, and Tiedemann have advanced absurd or pernicious doctrines, the discoveries to which their examination led, have brought a sufficient antidote. There are some who are alarmed at the advance of knowledge. But truth has nothing to fear from that, and none can contend that error *ought* to be perpetuated. In the present case it is imperfect knowledge that is formidable. With the growth of genuine information, we find the arrogance and dogmatism of an earlier epoch vanish, and the better we understand the operations of Nature, the more clearly we perceive the presiding hand of Intelligence. To prove what we have said, we shall quote the opinions of Müller, one of the last and of the best of physiologists, one on whose page the present state of physiology is written.

"Some have believed," he says, "that life,—the active phenomena of organised bodies,—is only the result of the harmony of the different parts—of the mutual action, as it were, of the wheels of the machine,—and that death is the consequence of a disturbance of this harmony. This reciprocal action of parts on each other, evidently exists; for respiration in the lungs is the cause of the activity of the heart, and the motion of the heart at every moment sends blood, prepared by respiration, to the brain, which thus acquires the power of animating all other organs, and again gives occasion to the respiratory movements. The external impulse to the whole machinery is the atmospheric air in respiration. Any injury to one of the principal moving powers in the mechanism, every considerable lesion of the lungs, heart, or brain, may be the cause of death; hence these organs have been named the *atria mortis*. But the harmonious action of the essential parts of the individual subsists only by the influence of a force, the operation of which is extended to all parts of the body, and which does not depend on any single part, this force exists before the harmonizing parts, which are, in fact formed by it during the development of the embryo. A complicated piece of machinery, constructed in adaptation to an end,—for example, a watch,—may present an action resulting from the co-operation of individual parts, and originating in one cause: but organic beings do not merely subsist by virtue of an accidental combination of elements; the vital force inherent in them itself generates from organic matter the essential organs which constitute the whole being. This rational creative force is exerted in every animal strictly in accordance with what the nature of each requires."

Müller goes on to observe:—

"The unity resulting from the combination of the organising force with organic matter could be better conceived, if it could be proved that the organising force and the phenomena of life are the result, manifestation, or property of a certain combination of elements. The difference of animate and inanimate organic matter would then consist, in that state of combination of the elements, which is necessary to life, having in the latter undergone some change. Reil has stated this bold theory in his famous treaty on the 'vital energy,' which some physiologists,—Rudolphi, for example, regard as a masterpiece, on which the principles of physiology must be founded.

Reil refers the organic phenomena to original difference in the elementary combination and form the organic bodies. Differences in the mode of combination of the elements and in form, are, according to his theory, the cause of all the variety in organised bodies, and their endowments. But if these two principles be admitted, still the problem remains unsolved; it may still be asked how the elementary combination acquired its form, and how the form acquired its elementary combination. That the form of the organic matter does not determine originally the mode of its action, is proved indisputably by the

the fact, that the matter from which all animal forms are produced is at first almost without form. The germ in all vertebrata, and probably also in the invertebrata, from what is known of a few species, and what I have observed in the planaria, is a round disk of simple matter; here is no difference of form corresponding to the difference of the animals. On the other hand the form of inorganic bodies is always determined by their elements, or by the combination of their elements. And this Reil himself admits; for he says: Form of matter is itself a phenomenon, which depends on another phenomenon, namely, the elective affinity of the elements and their products.' Hence it would follow that if the elementary combination were alone the cause of the organic forces, this elementary combination itself would be at the same time the formative principle. Now, since in organised bodies immediately after death, the elementary combination does not appear to be different from that of bodies still living, Reil must admit the existence of other more subtile matters not recognisable by chemical analysis, which are present in the living body, but are wanting after death. Into the composition of the organic matter of the living body there must enter an unknown (according to Reil's theory, subtile material) principle, or the organic matter must maintain its properties by the operation of some unknown forces. Whether this principle is to be regarded as an imponderable matter, or as a force, or energy, is just as uncertain as the same question is in reference to several important phenomena in physics; physiology in this case is not behind the other natural sciences, for the properties of this principle in the functions of the nerves are nearly as well known as those of light, caloric, and electricity, in physics."

Our readers are probably aware, that the "proximate principles" of organization are combinations of three or of the four elements, oxygen, hydrogen, nitrogen and carbon. But inorganic compounds are usually either binary, or combinations of binary arrangements. Were Reil's theory true, the peculiarity of organization would result merely from the fact of ternary or quarternary composition. But the general law of inorganic matter is binary or compound binary arrangement. How then, in the case of organic matter, is the usual arrangement altered. It is clear that there is a special force. It matters little what that force is called—"life,"—"anima"—"archæus." It differs from the law of inorganic matter, has properties and displays of phenomena of its own, and those phenomena and properties are as legitimate grounds for observation and for reasoning, as the laws of light, of electricity, or gravity.

The Discovery of the Vital Principle.—If we have hitherto advanced with difficulty, uncertain were to tread, and scarcely able to distinguish truth from error, our hesitation will speedily be exchanged for confidence—our difficulties and doubts for the fulness of belief—our painful search for truth for the rich possession of her. The discoverer of the vital principle is before us, and that discovery, the monument of his genius or his fortune, is in actual print. The subtle essence that escaped the observation of Harvey, Haller, or Hunter, has been happily distinguished and boldly grasped by the "*οὐδεὶς*" of the present page, and the 19th century has the honour of witnessing the publication of a secret to which no others are fit to hold a candle.

The discoverer informs us that —

"The intention of the present work will be evident on the perusal of the following brief outline of its contents.

Animal life being divided into three distinct stages, and these proving analogous to the solid, fluid, and acriform states of inorganic matter, all creation is here identified with the *animal origin*, and our universe, generally admitted to be in the condition of an undulating fluid, maintained to be capable of assuming also the solid and gaseous forms of existence: from which the following deductions have been made:—

1st. That an Ovum was originally formed, containing within its circumference or boundary, all known matter in a solid, latent, and inactive condition. From this ovum has arisen.

2dly. The Fœtal, or fluid state of matter, which has been endowed with active life for the purposes of organization; the heart being our sun, the other heavenly bodies—the several organs belonging to the foetus: the whole (our earth included) progressing at the present period towards the structure of one complete human frame, analogous to that of *Man*.

3dly. The future or perfected existence of the present fœtus as a locomotive being of celestial substance and imperishable nature: this last period answering to the life of man subsequent to birth, which is the acriform stage."—*Pref.* vii.

We have often heard of the value of analogy. Its force in argument is happily exemplified in the preceding passage. Who would have dreamt that the universe was once an ovum? Who, if he had not been told that the present is the fœtal state of matter, would have perceived that wonderful truth? Who would have guessed that the future was "a locomotive being?" And yet a little consideration might have hinted it; for the future means what is to come, and coming implies locomotion.

The solid form of matter, the ovum of the universe is (listen reader) the diamond!

"The diamond is, in my opinion, the identical primitive matter so correctly defined by the poet and philosopher I have just quoted. At first view it may appear a strange and bold assertion, but I expect to prove beyond a possibility of doubt, that from this material the universe, containing such an immense number and variety of bodies, was really organized. According to Pliny, 'the superior rigidity of the diamond renders it proof against almost every species of blow; insomuch, that if beaten on an anvil, the iron itself, both of the anvil and of the hammer, will yield before the diamond." 7.

Thus, we are all formed from diamonds. It has often been remarked that the germs of discovery have appeared among the vulgar. The Irish, that ingenious people, who notoriously have diamonds of their own,* naturally obtained a clue to the truth, and have infused their knowledge into their popular expressions. The force of "Och, my *jewel*, be aisy," must be apparent.

The ovum then was a diamond. It sprung to a fœtus.

"The fœtal life of this universe commenced with the first spark of electricity, elicited by friction in the centre of the ovum: on entering into this second stage of existence, primitive mater became changed from the oval to the cordiform shape, which transformation took place in the following manner.

Heat, with some few exceptions, is well known to ascend. In boiling a kettle of water (to use this very familiar illustration), the heat commences from the bottom (or source), and forces its way up to the top, forming in its ascent a line of levity, till it finally escapes and gravitates as steam. Now the particles thrown

* "Irish diamonds," unreasonably depreciated.

off from the ovum in the first instance, must have been projected upwards from the boiling point of matter, forcing their ascent in proportion to the violence of the stroke by which they were propelled. Losing gradually their elasticity, or fluid heat, these atoms, in falling, must have described the shape of a heart, and all converged to the freezing point, which, we perceive must be situated on the line of gravity of the ovum immediately underneath its apex, or coldest portion. This lower part of the ovum answers to the bottom of a kettle, which is always comparatively cool, while its top is in a boiling state. If the line I have described be drawn from this freezing point through the centre of the ovum to the opposite extreme or boiling point of its surface, it will cut the *poles* of our sun, and form the line of Apsides, which is the spine or gravitating line of the fœtus. This line extends to the extremities of the universal sphere, dividing the sun or heart into two cavities, similar to the structure of that of a human being. In the line of gravitation are situated the powers of galvanism (or animal magnetism), and electricity; both of which belong to animal life, and result from gravitation or pressure. Galvanism is elicited from fluid or boiling atoms, electricity from solid ones. Electricity, at the freezing point, awakens the latent spark of life; galvanism prescribes bounds to it; the central point on the line between these two forces of galvanism and electricity being our sun, the seat of life of the fœtus; life being, by these two opposite forces, kept active. The matter which becomes electric by means of heat, it is well known, is thus made to diverge; this species of matter identifies itself with that thrown off at the South Pole (or positive point of the universe), and conducts electricity: the law of repulsion by which such matter is caused to diverge, is situated in the point of galvanism; hence a spark is elicited and the matter diverges in the heart form. The non-conductors, on the other hand, require friction to produce electricity: such is the quality of matter in the negative or freezing point of the gravitating line, the North Pole of our universe, where is situated the force of attraction, by which it is made to unite and become electric; but no visible spark is elicited, though one is certainly the result of such union." 22.

How simple was the transformation into a fœtus, how clear all the subsequent changes! We take shame to ourselves for never having suspected them. Our author, it will be noticed, assumes nothing. Every step that he takes is sure, every assertion is proved. What can be more lucid than the passage we have quoted, what can be more convincing? The world *is* a fœtus. If evidence were wanting, it would be found in what follows:—

"The whole of this vast machine of the universe has progressed from one simple solid egg of diamond. This egg, the heart and centre of our sun, is in a constant state of combustion, throwing off from its mouth or cavity particles of boiling hot diamond, which liquid flame rises to a certain height by the combustion or electric force with which it is projected from the body of the sun, and then losing its heat, gravitates (as water does from a fountain) to his apex, which is naturally adapted for the deposition of planetary bodies. Here the matter becomes stationary, uniting by the attraction of cohesion into the primitive or oval form, and in this way have all the planets been first generated from the body of the sun in the order of their respective orbits, from Mercury outwards to the Georgium Sidus, each becoming in turn the extreme point of cold, (or apex of the universe,) and extending the sphere of the fœtus." 35.

A chapter on "matter" from such a hand may be well supposed to display peculiar excellences. It does; and, not the least, is the hearty freshness with which the author promulgates his notions. There is no trimming, no shuffling—the Discoverer of the Vital Principle feels that he has a right

to the discovery of everything else, and he does discover many things with wonderfully little trouble. For example:—

"All matter composing this universe is diamond; but that material varies according to combustion. At the point of extreme heat it is in a perfectly elastic, pure, and simple state; at the freezing point it becomes condensed or crystallized into what we term *Iron*. Now, all enquirers into the origin of matter have, by common consent, traced it to hydrogen and oxygen. I shall go a step farther, and assert that diamond is the base of hydrogen: iron that of oxygen. Hydrogen being matter in the point of extreme heat, oxygen being the same material in its most condensed state at the freezing point. These two gases, when combined, constitutes *water*, which is our gravitating element. We shall, accordingly, find that the particles of matter deposited by the sun at our planet are, in fact composed of diamond or hydrogen, and iron or oxygen, accompanied always by a certain proportion of *carbon* (or diamond in a cinereal state), all which are to be traced to the simple diamond." 62.

If that is not philosophizing we know not what is. Our author has a great advantage. Having found out all the secrets of Nature, he is not obliged to resort to the clumsy manipulations of chemistry. He need not decompose, nor recompose. He asserts that diamond is iron, and iron oxygen. To prove it, all that he has had to do, has been to go "a step farther." All other proof would be superfluous.

We have said enough to introduce our readers to the vital principle. They will not probably anticipate it, but we are sure they will anticipate something racy. What do they think of *dew* being the vital principle?

"Dew, which is quietly descending to us, to cool the vapour of the globe, has not yet been sufficiently investigated. There are some seasons of the year during which life would be insupportable without these most refreshing heavenly drops. It is well known how much dew contributes to the growth of plants: who has not noticed that during the greatest heat of summer, when dew falls most abundantly, and rain frequently descends in torrents, that not only is vegetation most rapid in its growth, but animals and worms of various kinds, and insects of every description are generated? *Dew, or rain*, however, has never yet been considered the *primary* cause of animal and vegetable organization. From what I can collect from Dr. Wells and other authors, I feel convinced that dew does not belong to our globe, the earth, but that it comes directly from the sun to us, and is always accompanied in its descent with black specks, similar in appearance to soot or flakes of charcoal; these black flakes and specks, during the severity of our winter, become, with the dew and rain, crystallized, and fall to our earth as snow. Thus it will be seen that dew, when deposited upon our earth, is not a simple but a triple substance, viz., carbon, hydrogen, and oxygen. Who has not experienced the unpleasant sensation caused by snow after it has lain on the ground for a day or two? It no longer retains that beautiful and primitive whiteness which it had on its first descent to the earth: on the contrary, it becomes dirty and spotted, dark, cold, and comfortless, and uneven on its surface. This aspect of snow is not confined to towns or their vicinity, where it might be conjectured to arise from smoke and dust descending from our atmosphere: no, snow presents the same appearance on barren heaths, on mountain tops, or the wildest plains." 172.

Dew, then, plays first fiddle in the scheme of Nature.* How it becomes the vital principle is not, at first sight, clear. But, perhaps, the following considerations may enlighten us.

* This sufficiently explains the popularity of "Mountain Dew."

"Oxygen is the consolidation of the liquid hydrogen into metallic substance. Carbon is the cinder, or dust, resulting from the union of the two former. These elementary bodies are always united: they are all necessary to the existence of each other, and can never be entirely separated; when, however, these three materials come into close contact by surrounding pressure on the atmosphere, the electric spark on liquid flame escapes, and locomotive animal life is generated. In the aerial species of animal life, such as birds and insects of every description, particularly flies, the carbon and hydrogen predominate. In the larger animals that move on the solid body of the earth, the hydrogen and oxygen prevail. In the lowest species of the creation, such as burrow in the bowels of the earth, the carbon and the oxygen must always predominate; for however low and degraded the animal may be in the scale of life, still oxygen must be the base, and form the first germ of terrestrial animal structure, carbonic acid gas forming the fluid atmosphere surrounding every animal whether simple or compound in its mechanism." 183.

It would be superfluous to argue upon this. The vital principle is discovered. We may shout, like Xenophon's companions, θαλασσα, θαλασσα!" Dew is at the bottom of it. Just conceive the simplicity, demonstrability of the theory. Theory do we call it—the truth—the axiom. People have been sleeping for forty centuries in the open air and never found out that dew, and nothing but dew is the vital principle. Dew comes from the sun,—the sun is a diamond,—we are bits of diamonds, "chips of the old block"—of course dew *must* be the vital principle. The wonder is, not that dew is life, but—that we never found it out. Hail, nameless author! greater than Harvey, why wilt thou hide thy name?

Our readers must have been already struck with the magnificent conceptions of the discoverer of the vital principle. One who could find that principle in dew, would be pretty certain to make some other hits in physiology. In a chapter upon man, which ought undoubtedly to have been incorporated into a Bridgewater Treatise, and which may yet be amplified into one, we are gratified with the "ovum" of ideas, which, if so grand in their miniature condition, will indeed astound when developed into their "fœtal state."

There are seven organs, the exact number of the Seven Champions of Christendom, with which *we* do not doubt they have a close connexion.

"Each organ has its boiling and freezing point, or a line of gravity peculiar to itself, (see page 31 and 32 of this work,) and may be said to resemble a jette d'eau and filtering machine While these organs filter through their sides or coat, they are also throwing off from their upper surface (or cavity) a continual stream of boiling fluid diamond, by means of the veins and arteries, which material descending to its gravitating point, (the point of extreme cold,) forms fresh provisions for the organs or vessels beneath. Wherever the veins and arteries terminate, the nerves commence. These last have their origin in the uterus, and terminate in the brain. The deposition of matter in the uterus occasions a boiling electric fluid to arise from thence, which, forming vessels in pairs, ascends to elongate the spine, and finally deposits at the extreme point of ascension the material which constitutes the brain." 209.

It would be useless to comment on these sublimities. As they pass the limit of ordinary understandings, and rise superior to the forms and substance of mere reasoning, the only thing left is to fall prostrate and adore in the Mussulman fashion. "Alla il alla, there is but one vital principle, and the great unknown is its prophet." We cannot resist the opportunity of giving a sketch of this huge philosopher's fœtal circulation.

"The heart, veins, arteries, and lungs are all filled with hydrogen, and the child comes into the world gasping for life with its mouth open." In this interesting situation, "the oxygen of the atmosphere coming in contact with the hydrogen, inflates the lungs, and, with the utmost velocity, gives an impetus to the expiring heart. It is in fact the contraction or condensation of the outward fluid amnios pressing the white blood (or hydrogen) back again into the cavity of the heart, which had rejected it, that causes an extraordinary effort in that organ to relieve itself, and, with one volcanic or muscular opposing effort, to throw the whole of its fluid contents to the outward surface. Thus is given impetus to the whole muscular frame of the almost exhausted fœtus, while the fluid repelled to the surface, assists to throw the helpless foundling babe on the shore of an unknown island." For scientific truth, dramatic interest, simple grandeur, and domestic pathos, *this* fœtal circulation seems unequalled.

It might reasonably be supposed, that man being made of diamond, was likely to last. But there is one disturbing circumstance, which our readers have not taken into the account. He is a great worm manufacturer.

"Man is a complete manufactory of worms: every organ of his frame being built from them, and cemented together to form one grand whole. When, therefore, by any means, this cement is loosened by its elastic property becoming decomposed, the worms are set at liberty, and become themselves active living fœtuses; gradually making their way to the surface of man's body, they raise in his skin tubercles of various forms and sizes, like unto the hillocks and mountains upon the earth's surface, and, like them also, they burst forth and form volcanic eruptions, emitting their lava, by the attraction of which new depositions are formed from the external atmosphere." 468.

"Man, indeed, is (and I feel assured the theory cannot be denied,) formed of a complete tissue of worms. From the very centre of the system unto the surface, his whole body is nothing but a continuation of worms, all linked together to form one tree or rock, rising up perpendicularly to the earth's surface."

The worms themselves are made of diamond too, and there could not be a more happy illustration of the branch of art popularly denominated "diamond cut diamond," than this.

Divines are but too sensible of the consequences of the first great disobedience. We know not how they will receive the intelligence, that the forbidden fruit was—malic acid—and that it grew in the United Kingdom. Yet the unknown proves this as satisfactorily as he proves any thing.

The plot naturally thickens as we approach the termination of the volume. It seems that man, by the increase of his mechanical power, has formed new plans quite contradictory and inferior to the mighty plan of God: an error which has been creeping on ever since the flood, and has now become one frightful vice. Our situation is therefore very critical. The whole race of human beings, is on the very brink of being turned again into diamonds. and a strenuous effort is necessary on the part of each individual. We must, make a long pull, a strong pull, and a pull altogether.

The remedy is obvious. Diffuse a knowledge of the vital principle. Make every man his own physiologist and doctor.

"Away, then, with every imaginary distinction of birth, of employment, or of country! we all are of one family—descended from one parent; our common

country—the whole habitable globe; our employment—the one end and aim of perpetuating and improving the human species! Medical information must be extended without reserve to every branch of the community, in order that each individual, by the preservation of his own health, may contribute his share towards purifying the atmosphere." 542.

Can anything be more easy than that? We have been exhaling carbonic acid for sixty centuries. Let every man be his own doctor, and exhale nothing but oxygen.

As subordinate items of this glorious plan, we must warn our readers to prepare for emigration on a large scale. The unknown addresses to them this inspiriting address:—

"Make ready to set sail to the east—to the west—to the north—to the south! A discovery more brilliant than that of Columbus awaits you! a new, an unexplored region is about to be revealed—a country already the abode of your fathers, your mothers, your sisters, your lovers, and your friends!" 544.

For those who live inland, and cannot set sail direct from home, this man of wonder has a remedy. It is to construct Nassau balloons.

"The human mind, by this time, will comprehend, from the perusal of the preceding pages, how a remnant of the virtuous portion of mankind may be saved alive in the last day by the very powerful invention of balloons. Ere the awful termination of the present abode of man, let us hope we may see the surrounding atmosphere spotted and illumined by moving vessels of every description, as we now behold them on the waters. Here then is excitement for genius and talent to unite in every possible way; not a moment should be lost in devising the means of preservation from the impending danger." 393.

We are exhausted with the grandeur of these pages. We have done our duty. The readers of the Medico Chirurgical Review, at least, will be saved, and all we ask is to order their booksellers in the New World to continue to take *us* in. Surely this is moderate and modest. An ordinary person might suppose that the discoverer of the vital principle had either just escaped from a keeper, or was in immediate want of one. A base reward for a man who has shewn us that our real composition is malic acid and diamond, and has told us of a certain method of cheating Death and the Devil.

Essays on the most important Diseases of Women. By *Robert Ferguson*, M.D. Part I. Puerperal Fever. 1839.

We shall be much deceived if this work, even if no other parts succeed it, do not lay a lasting foundation for its author's reputation. Dr. Ferguson goes to work in the true way. He deduces legitimate consequences from authentic facts. His materials are drawn, without exception, from the records of the General Lying in Hospital, during a period of twelve years, and amounting to 204 cases of a disease which causes seven-eighths of the mortality in child-bed. These cases are not narrated by the author, and dressed up, as too frequently occurs, according to the fancy, or interest, or vanity of the recorder. They are the bed-side notes of the ablest pupils, inscribed day by day, and left for the inspection of all. Those who are employed in the wide field of actual practice in the sick chamber, rather than in the library of the briefless critic, know well the difficulties which beset the physician or surgeon at the bed-side of puerperal fever. No subject has given rise to more clashing and perplexing incongruities both of theory and practice, than the one under discussion. Tonelle (one of the latest and best writers) observes that, "a comparison of its phenomena (puerperal fever) as seen in various epidemics, and a fusion of separate opinions into one collective result, will alone permit us to understand and to alleviate this formidable disease." Dr. F. has set this standard before him, and has endeavoured, to the best of his abilities, to compare his own experience with that of others, We shall proceed at once to a close and copious analysis of this important Essay—a somewhat difficult task, since there is scarcely a word superfluous or that could be spared, from beginning to end. The language is elegant, terse, and perspicuous, without the slightest attempt at meretricious ornament. It is, indeed, a perfect model for medical literature. It is the Celsus of the 19th century.

Chapter the First exhibits the various forms of puerperal fever. These are four—all distinct in their general characters, and requiring different treatment. The first is the *peritoneal* form—the intensity of the malady falling on that tissue, and lingering longest there. The second form consists of *general fever*, with much disorder of abdominal viscera—the symptoms being often *remittent*, sometimes even *intermittent*. In the third form, the *brain and nervous system* suffer most—whilst the fourth form seems to be a complication of the other three—with this dangerous feature in addition—a tendency to effusion in any or every tissue—of blood, serum, pus, and lymph. The last kind of effusion is the most common, and the most dangerous—especially in crowded hospitals, and in the abodes of misery and filth.

"These four forms—the peritoneal, the gastro-enteric, the nervous, and the complicated, spring, as I shall endeavour to shew, from one source and cause. There is no trenchant limit which bounds them in nature; and in every epidemic which I have witnessed, the characteristics peculiar to any one are readily assumed by another. In the peritoneal form, the peritonitis ceases, and the patient succumbs under fever and diarrhœa—or under a complication of local effusions and phlegmasiæ. In the gastro-enteric, sudden peritonitis will supervene, and carry off the patient in a few hours. Such also may occur in the third

or nervous form, or it may (though it rarely does) terminate by a lengthened fever, or by deposit in the great cavities, or in the joints, the muscles or the eye-balls. It is the last form alone which is invariable, save in intensity. It may be looked on as a summary of the others, while these may be considered as fragments of it." 2.

The one or other of these forms generally gives the character to an epidemic—swallowing up, as it were, the other forms—hence the confusion and discrepancies of authors respecting the symptoms and treatment of the malady. The variations in intensity, as well as in form, have proved another fertile source of contrariety of opinion amongst observers. After animadverting on the various classifications of authors, Dr. F. proceeds to the—

1. PERITONEAL FORM.—This is characterized by abdominal pain—of two kinds—the one durable and dangerous—the other transient, and easily removed, if uncomplicated with other disease. The difference between plus and minus in the ratio symptomatum is not very easily estimated.

"Of two patients attacked by abdominal pain, it will in the majority of cases, and at the commencement of an epidemic, be very difficult to ascertain which is the slighter and which the severer malady. In both, the intensity of anguish, the seat of the pain included between the pubes and a line drawn from the superior crest of one ilium to that of the other;—the precursory rigor followed by the hot fit;—the time of attack, from the first to the fifth day after parturition, are all the same, and neither the pulse, nor the degree of fever distinguish the one from the other. The action of remedies, however, shews their distinctive characters. The transitory form being readily relieved by such agents as lull pain, while the other requires such as are used to quell pure inflammatory action. The transient abdominal pain passes into the second, or permanent kind; but in some epidemics it forms the principal character of the common malady, and I have never seen one, in which some of these cases did not occur. In the year 1827, and a part of 1828, this form of malady was very frequent, and I had repeated opportunities of pointing it out to the pupils of the General Lying-in Hospital, with whom it obtained the name of false peritonitis. One of these, my friend Mr. Hingeston, subsequently published cases which he saw during the period of his residence at the hospital, which possess the double advantage of being well reported, and of authenticating the existence of a form of malady which has been denied by some." 11.

In the epidemic of 1827-8, this form of puerperal affection was very prevalent along the banks of the Thames, and Dr. F. was so worn out with incessant calls, that he directed the matron to send to each applicant two ten-grain powders of the pulv. ipecac. comp., one to be taken immediately, and the other four hours afterwards. If the peritoneal pain continued after the second dose, then the Doctor was ready to attend. After this regulation he was relieved from four-fifths of his visitations.

"As to the nature of this form of puerperal fever, Mr. Hingeston looks on it as nervous, only in the sense in which a nervous impression precedes every inflammation; the peculiarity being its permanence in this early stage. Mr. Griffin regards it as nervous pain, dependent on spinal irritation; M. Tonelle, as connected with the circulation of pus in the veins.

I believe these opinions are not really different, except in each being only a part of the truth. M. Tonelle, I think, and shall prove hereafter, would have given the real cause had he generalized his proposition into a vitiated state of the blood, instead of limiting such vitiation to one cause, namely, the circulation of

pus. In many instances we have the genuine marks of vitiated fluids, without being able to detect a particle of pus in them. Le Gallois mixed pus with blood, while it flowed from the arm, but could not, subsequently, detect in the compound any of the matter; hence, pus may exist in the circulation without our being able to discover it. But I shall, hereafter, show that other products of inflammation will vitiate the blood." 18.

Our author considers that the treatment of this incipient disease is not a matter of indifference. He believes that a large bleeding in such a stage would change its transitory into a permanent character, and render it a formidable malady. The diagnosis, however, is allowed to be difficult.

"If the pain be very sudden in its onset; if there be *intermission*, we may fairly expect relief from opiate. If there be *remission*, well marked, we may resort, with much hope, to the same treatment.

If the pain be constant, we may, under the following limitation resort to opiates in the first instance, namely; 'if our previous experience of the reigning epidemic has proved that the peritoneal pain has in other cases easily shifted.' Hence the *nature* of the epidemic is to be studied, and used as a guide.

Lastly, we may, in doubtful cases, resort to the opiate treatment, and, should it not have produced, in four hours and a-half, after two 10 grain doses of Dover's powder, a marked amelioration, we ought, forthwith, to resort to local or general depletion.

The routine of the hospital practice in cases of abdominal pain has been this. A hot linseed-meal poultice, immediately on complaint of pain—and this as it induces perspiration, is very often alone sufficient; then, an opiate with or without an aperient; and in the event of no amendment within four or six hours after the attack, a change of treatment according to the nature and grade of the disease." 21.

The second or permanent form requires local or general depletion of an energetic character. It has four stages—the first an ague fit—the second marked by severe abdominal pain, fever, hard pulse, restrained breathing. The third stage is that of effusion, marked by *apparent* amelioration. The fourth is collapse, with change of countenance, laborious respiration, cool surface, swollen abdomen, pulse rapid—mind usually clear. Purely peritoneal inflammation, however, is comparatively rare in puerperal women. Other organs are generally implicated.

2. Second Form—Gastro-enteric Irritation.—This form assumes the general character of mild typhus fever, accompanied by intestinal irritation. There is no peritoneal affection, or it is very slight, being lost in the general disturbance. It rarely lasts less than seven or more than twenty days. It is ushered in by rigors and then reaction.

"From the very onset of the disease, there is some marked irritation of the mucous membrane of the intestinal canal—either vomiting, nausea or diarrhœa, in which the evacuations exhibit every kind and grade of vitiated secretion, varying in colour, consistence, offensiveness, and frequency. The tongue, at first loaded and white, soon becomes preternaturally red; as in those affected by chronic dysentery. The skin is dry, hot, and of a dusky yellow hue; the mind is unsettled, without being absolutely delirious, and the impressions on the eyes are unwontedly vivid; the debility is extreme, and the limbs very tremulous. There is a very marked remission during the day, and an equally marked exacerbation towards evening, and night, when the dreams of a troubled sleep are so vivid as to impress the mind with all the distinctness of reality. Even

during waking, the patient sees objects flitting constantly before her eyes. In some instances there is watchfulness and mild delirium during the night, with perfect mental collectedness during the day. This grade and form of puerperal fever rarely or never terminates fatally without first becoming complicated with some acute inflammation of an important organ, as the peritoneum, or the thoracic viscera; or some deposition in the joints or limbs, followed by colliquative diarrhœa. Hence, the lesions found after death are chiefly of the organs last attacked, while the primary affection of the intestinal canal, is scarcely marked by any structural disorganisation. The uterus, however, will, as usual, be found either much congested and large, or its veins and lymphatics containing pus, or its inner mucous surface superficially softened. When there is extensive softening of this viscus, all the above characteristics of this form of puerperal disease are merged in the broad and very obvious signs of an overwhelming, and from the very first, a fatal typhus. There is no peritoneal pain, but merely very deep-seated and obtuse sensibility to firm pressure. The mind and body are equally prostrate and enfeebled. The skin is of a deep-brown colour. The pulse small weak, and very rapid. The abdomen soon becomes tympanitic, and the whole intestinal canal seems filled with dark fluid, which is vomited without effort in large gushes, or passed in unrestrainable diarrhœa. The less formidable of these two grades seems to have given the character to an epidemic, which was described by Dr. Butter in 1775, under the term of remittent puerperal fever." 24.

3. THIRD, OR NERVOUS FORM.—This, in a pure and isolated form is very rare, comparatively, though it is not unusual for it to set in, and, for a time, interrupt the course and character of some of the other forms of the disease. It is distinguished by terror of mind, coldness of skin, much agitation, and sense of impending death, faintness and prostration.

"Those in whom the nervous character is the sole, or at least the most prominent part of the puerperal fever, exhibit all its symptoms in all their irregularity and inconstancy; there is painful and sudden abdominal tenderness which subsides with extreme rapidity; there is a rapid pulse, great restlessness, and mental uncertainty and agitation, together with shifting functional disturbance of various organs; sighing, tremors and cramps; sudden and death-like sinking, and as sudden re-appearance of strength; with these, there are nevertheless, from the beginning of the attack, unequivocal marks of deep injury to the nervous system. The faculties and feelings are strangely disturbed, and the terror the patient expresses, or the furious delirium which often ushers in the attack, soon gives way to fatal coma, or sudden syncope." 26.

4. FOURTH, OR COMPLICATED FORM.—This is an appalling malady, being the simultaneous or rapidly successive attacks of various organs and tissues of the body. It begins from the first to the third day, with shivering, often followed by abdominal pain. The debility quickly amounts to prostration. The mind is calm, and unconscious of danger. The pulse is rapid, the skin dusky, with red patches on the cheek, the eye glassy, with lead-coloured lids. The abdominal pain sometimes last during the brief tragedy—sometimes subsides soon. The intestinal canal is usually the first to suffer in the list of complications—dysentery or diarrhœa, with tormina and bloody stools, taking place—terminating, at last, in coffee-coloured evacuations. The lungs are generally affected, functionally or organically. There is loud and incessant sighing—or short interrupted breathing—or pneumonia. The pleura is often attacked, and effusions take place into the cavity of the chest. Our author has seen gangrene of the œsophagus, and even of the lungs

themselves, perforations of the stomach and intestines, lesions of the heart and its coverings, &c.

"In some instances the skin retains its natural colour, while in others the portion over the painful spot is red, tumefied, and very hot. Either this state gradually subsides, or a soft quaggy feel is communicated to the pressing finger, and then an effusion of pus, serum, or blood, or a mixture of all, will have taken place; after which there is usually complete relief to the limb, and a subsidence of febrile and other symptoms; nevertheless, these formations, regarded as critical by most observers, do not save the patient from dying of colliquative diarrhœa and perspirations, with their attendant exhaustion, except in the milder cases. Whenever these abscesses supervene, the result is very doubtful. When the effusion consists of pus, it is not contained in cysts, but lines the sheaths of the tendons, or is smeared over the muscular surfaces, or infiltrated between the fibres. The muscles of the back of the fore-arm, and those of the calves of the legs near a joint, are most frequently attacked." 28.

The joints are nearly as often the seat of disease as the muscles, and containing the same depositions. Dr. F. has never seen the osseous system attacked. Of the connexion between erysipelas and puerperal fever, Dr. F. may say that the two maladies are generally coexistent in his hospital. Gordon and Hey observed the same coincidence. The intensity of the disease differs in different epidemics.

"As to the organs attacked, taken isolatedly, my experience proves to me,—1. That each organ may undergo every grade of disease, from simple irritation, which will not proceed further, to total destruction and softening of its tissues. 2. That when many organs are attacked at once, or consecutively, they are not wrought up to one uniform pitch of malady; that while one is simply irritated, another is gangrenous. Thus I have seen co-existent, inflammation of the peritoneum, with painless and sudden perforation of the œsophagus. What are our indications for such a disease, and what our hopes of cure?" 35.

Chap. II.—Morbid Anatomy.

The peritoneum, though the seat of pain during life, is often found pale on dissection. A certain degree of vascularity, or even inflammation, may, as in scarlatina and erysipelas, leave no trace of its existence, post-mortem. If the pain, however, has been of long duration, and intense, there will be more or less of redness, with effusions of serum, lymph, blood, pus, or coagulable lymph. The uterine peritoneum, and the ligamenta lata, are more frequently the seats of the phlogosis than other parts. Few changes are discovered in the mucous membrane of the intestinal canal. When affected there are either inflamed patches—softening and perforation—or ulceration. The stomach is often softened, and sometimes perforated. The intestines are usually distended with air, and containing large quantities of a brownish fluid. The liver is often affected. Its peritoneal surface being not unfrequently coated with a layer of lymph, and its substance distended, and softened. Abscesses are rare. The kidneys present traces of inflammation, with depositions of pus, flakes of lymph, &c.

Uterus and Appendages.—"The peritoneal coat is very frequently injected, covered with lymph, or raised by a subjacent layer of pus or blood, or both. Its substance is soft and flabby, and its contractile powers so thoroughly sus-

pended as to permit no diminution of its volume. It is as large ten days after delivery, as it was immediately after the expulsion of the placenta. Small abscesses are found occupying various depths of the uterine walls. There are patches of thoroughly dissolved uterine matter, the softening almost always commencing in the inner surface of this viscus, and sinking towards its peritoneal coat.

This softening belongs to that class of lesions which cause perforations in the stomach, and dissolutions of the muscles, so common in this malady.

The inner surface of the uterus is often smeared with a thick layer of gelatinous blood, underneath which, patches of reticulated lymph, tinged greenish brown, or modena colour, are found. Cruvelhier, Dugés, Seiler, have all looked on this layer as a false membrane, and not the remains of the decidua. I have examined the uterus to verify this opinion, and I am, on the whole, satisfied of its correctness." 38.

The chest, the vascular system, especially the veins, shew traces of the ravages of this terrible disease.

"The uterine veins, forming a mesh-work, like the structure of the corpora cavernosa penis, are chiefly affected. The lining membrane is very often quite pale, though covered with false membrane or with pus. Their coats are thickened and their cavities obliterated, or contracted from interval to interval, when the disease extends beyond the uterine substance. When the neighbouring veins are affected, the adjacent cellular membrane is hardened or infiltrated, or forms a bed for purulent matter. The uterine veins are often found perfectly healthy, when the spermatic or renal, and still more distant veins are thoroughly disorganized. Besides the presence of pus or lymph in the veins, gritty and grey, or light brown coagula are found. The mass of blood not unfrequently retains its fluidity after death.

In a certain number of cases no lesion can be discovered in the vein, but the presence of some unnatural fluid. It is disputed whether it is absorbed or the product of venous inflammation. It is of little moment which of the two opinions be adopted; the disease depends not on how the matter is produced, but whether it enters the circulation. Whether this be by absorption or by inflammation, puerperal fever is the result. The prevailing opinion of secondary abscesses being, not metastases, but new inflammations, is, I believe, the true one.

In the ligamenta lata the presence of pus may be almost always detected: it is usually more frequently found in the lymphatics than in the veins,—and, Cruvelhier is of opinion, that phlebitis is rare, in comparison with pus in the lymphatics. It is collected in small pouches, which give the lympathic a beaded appearance, and render it readily traceable." 40.

Purulent depôts are found in the joints, muscles, and other structures of the limbs, and the body is more rapidly decomposed after death, than in other diseases.

Such is a succinct history of the ravages produced by puerperal fever. The dissections which our author has made, are sufficient to establish the existence of all the lesions enumerated, but not their relative frequency, which can only be done in very large hospitals, as those of Paris.

CHAP. III.—NATURE OF PUERPERAL FEVER.

Hitherto we have been sailing on velvet. It required but a sharp eye, industrious fingers, and attentive observation, to chronicle the symptoms

during life, and the morbid lesions found on dissection. But when we come to discuss the *nature* of puerperal, or indeed any fever, we must take a higher flight. "Paulo majora canamus." Our readers will, we think, have guessed by what has already transpired at the theory to which our author is coming.

"The three following propositions embody my views of the source and nature of puerperal fever.

I. The phenomena of puerperal fever originate in a vitiation of the fluids.

II. The causes which are capable of vitiating the fluids are particularly rife after child-birth.

III. The various forms of puerperal fever depend on this one cause, and may readily be deduced from it.

By the first proposition, I shall endeavour to show that the cause assigned will account for the phenomena of puerperal fever. By the second, I shall prove that the assigned cause really exists; and by the third, I shall endeavour to trace the various forms of puerperal fever to the one source from whence all of them proceed." 53.

First Proposition.

The blood may be vitiated by the direct artificial introduction of noxious substances into the circulation—or by certain diseases, as scurvy, purpura, jaundice, &c. The results are, a tendency of the blood to escape in a hæmorrhagic form, or mixed with mucus or serum—or in the shape of various local affections of different parts of the body. When vitiating agents are introduced artificially, they generally shew their effects most in the neighbourhood of the point of introduction. Our author then goes on to analyze the experiments of Gaspard, and Cruveilhier, which we need not advert to here, as they are sufficiently known to our readers.

"From these six experiments of Gaspard, we may conclude that the vitiation of the fluids will produce general fever, with local irritation or inflammation of different organs at the same time; that in the first four this fever was accompanied with gastro-enteric disorder; in the other two, by general functional disturbance, resembling the nervous form of puerperal fever." 58.

Various other experiments of Gaspard and Cruvelhier are adduced, and commented on by our author.

"From these and other experiments, Cruvelhier concluded, by believing that in inflammation the veins are chiefly affected; that the redness is venous, that the pus effused is from a simple rupture of veinules; that in inflammations of degenerate tissues, it is the veins which are developed, as in soft cancer and cephaloid tumor. Without entering into this hypothesis, we see that there are two sources from which the blood may be vitiated—either by the primary injection, or absorption of injurious substances; or by direct injury to the solid coats of the veins, which in consequence inflame and *secrete a fluid or fluids, which mingling with the torrent of the circulation*, act as if they had been primarily injected." 65.

"Gaspard's and Cruveilhier's experiments prove, that many substances will produce the same fatal effects, and by the same disorganising process; that mercury, thick unctuous substances, acrid fluids, gritty powders, and bits of stick, when placed within the vessels, all produce the same essential train of symptoms; while saliva, milk, urine, bile, cause little disturbance. Many of the deleterious

substances produce no action on the coats of the large vein, and yet the symptoms resulting are precisely those which a wound and inflammation of the vessel will give rise to.

In the first case we are certain the cause of death is to be sought in the action of these substances, not on the injured vein, but on the blood, And in the second, we are equally certain that those very fluids are poured out by the inflammation of the vein, which if injected into an uninflamed vein of a healthy animal, would produce death. We should conclude, therefore, that it is the vitiation of the blood, and not the inflammation of the coats of the vein, which produces the disease.

It may be said, that though it be granted that the phenomena consecutive of artificial vitiation of the blood strongly resemble those of puerperal fever, yet that this indentity of cause may after all be only a probable surmise, and that no certain conclusion ought to be drawn, unless it could be proved that putrid substances absorbed by the uterine vessels produce puerperal fever.

Such an experiment has unfortunately too often been made; and Gordon, Campbell, and Kirkland, have most distinctly acknowledged, that retained and putrid placenta or coagula will produce a genuine puerperal fever, not to be distinguished from that they have each described." 67.

Cases are related from Gordon and others in illustration, and then Dr. F. proceeds to—

PROPOSITION II.

The object is to prove that the causes of vitiated blood are peculiarly rife in the puerperal state. Thus are the vessels mechanically injured? Are they in contact with any noxious matters? The uterus, he avers, after childbirth combines both these conditions. All the uterine veins and arteries have been torn from the placenta, and they form a part of a large wound. They are bathed in all the secretions that take place while this wound is healing. "In this respect the uterus presents an exact analogy to the surface of an amputated stump; and it is not surprising that the secondary evils of amputation should be so similar to those of the puerperal state." Cruvelhier has seized this analogy in its minutest details—and his words are quoted by our author.

"Whether, then, I turn to the analogies afforded by comparative anatomy, or to the direct evidence afforded by inspecting the human uterus, in a healthy state, soon after delivery; or whether I look to the authorities of competent anatomists,—I find, that after child-birth the womb is like an amputated stump, and that it has a reparative process to perform, which, being disturbed, permits the large gaping vessels to spread in the blood noxious secretions which they have imbibed." 80.

PROPOSITION III.

That the various forms of puerperal fever depend on the one cause of vitiated blood, seems to be the most difficult task of all—but it is grappled with manfully by our ingenious author. He sets out, indeed, by assuming that the experiments of Gaspard must have led every one of his readers to this inevitable conclusion, since in those experiments it was seen that the vitiated blood produced in one case one group of lesions, in another case a different group, and so on—the variation being not only of place or organ, but of intensity.

"But how, it will be asked, are we to account for this partitioning off of so diffuse a malady, as that induced by vitiation of the blood? why is it not always spread where ever there is blood? and why are puerperal fevers, now peritonitic alone, now metro-peritonitic, now gastro-enteric, and now falling on the nervous centres?

We know that the blood-vessels, like every other part of the body, are in their nature capable, of themselves, of repairing injury, and stemming the actions of disease. The experiments of Gaspard and Cruvelhier, permit us to infer that there is always an endeavour to hem in the noxious cause as near to the spot first injured as possible; and Mr. Arnott has remarked,—what Cruvelhier had stated in 1820—that coagula form, to prevent the spread of inflammation of a venous trunk; while the former gentleman, more minute in his investigation, has always found that the injured vessel is obliterated only up to the first branch it gives off; as if nature, while endeavouring to pen up the exciting cause of malady in as small a compass as possible, wished to use whatever she could of the other channels of circulation.

It is from this law, that we find the injuries of puerperal fever so often confined to the uterus and its appendages, to the lower portion of the peritoneum, and to the adjoining intestinal canal; for we have seen that the point of departure for the noxious matter, is in this disease from the veins of the uterus." 83.

As for the attempt to trace the paths by which distant organs are affected, he thinks this could be done, provided we knew which of the uterine veins became the channel of infection. This being impossible we must be content with the same degree of knowledge which we possess with regard to other poisons affecting the circulation.

"In conclusion, then I deduce the first, or peritoneal form of puerperal fever, from the action of the poison being more or less confined to this membrane.

The second form, or the gastro-enteric; from the action on the liver, the organ through which, as the experiments of Gaspard and Fountana, and the admission of all physologists shew, most poisons received into the system endeavour to escape. Whether the mucous membranes of the intestines are affected directly by the vitiated fluids, or secondarily through the acrid secretions of the liver, or in both ways as I believe, the group of symptoms constituting my second form of peurperal fever remains the same.

The third, or nervous form, I conceive to result from an impression on the nervous centres, not necessarily inflammatory, though it sometimes leads to inflammation. John Hunter speaks of this condition of the nervous system, under the metaphorical expression of 'alarm.' The first impressions of the most virulent poisons, are very commonly accompanied with panic and extreme agitations. Fontana found this to be the case with dogs, after inoculation with the viper poison. The symptoms produced by the poison of cholera, of small-pox, and of vegetable miasmata, are in a certain number of cases so characterised. The impression on the nervous system, which is transitory in other cases, and soon veiled by the specific symptoms of some organ or organs labouring under the attacks, remains in this as the permanent feature of the disorder; but violent perturbations of the nerves are, under such circumstances, speedily fatal. Where death does not take place from nervous perturbation alone, the membranes of the brain, and the cerebral substance, are found altered by the same process as seen in other parts.

The fourth, or complicated form, is the result of a poison not confined to certain structures as the peritoneum or uterus, where its violence is pent up and exhausted, but diffused by the circulation over many organs, causing each to react after its own laws, and giving to the disease it produces a character of inextricable confusion, and almost hopeless fatality." 86.

Thus ends this important Section, for which, indeed, the reader was pretty well prepared by all that preceded it. No one can fail to doubt or to admire the ingenuity with which he has worked up all the facts and reasonings that could be made to bear on the question. So systematically has he proceeded that the whole looks more like a sober induction, than a startling hypothesis. The theory, too, is very seductive. We delight to trace numerous, and apparently opposite phenomena to one single cause, and feel a kind of pride in being able to do so. In the present case, however, there is one startling consideration bearing on the theory of our author—namely, that the Almighty must have ordained that half the human race, and the most amiable half, should be not merely once, but many times in their lives, in the same state of danger as a man with an amputated leg! This is a serious drawback on population, and seems to have been overlooked by Malthus and the political economist. Fortunately for the warrior and the puerperal female, the conditions which render amputation and child-birth dangerous, are comparatively rare. The investigation of these conditions is not less important than that of the unique cause of puerperal fever, the result of these conditions. This investigation is rather briefly treated of in a Chapter in which he examines the opinions of various authors respecting the nature of puerperal fever. These opinions we shall pass over, but notice the—

PUERPERAL CONSTITUTION.

The Germans attribute the essence of the fever in question to the efforts of Nature to bring back the female constitution to the state in which it was antecedent to pregnancy and parturition. The changes during utero-gestation are slowly made—the return to the ordinary state after child-birth, is rapid—and thus the tendency to disease is increased. The high susceptibility of the nervous system, at such periods, facilitates morbific impressions. The disturbance of lactation plays its parts also. Still this theory of the Germans is regarded by our author as very defective.

Dr. Hall has connected this fever with intestinal irritation, and this latter was found in three-fifths of our author's cases. But a careful scrunity led Dr. F. to infer that the intestinal irritation was secondary to the metro-peritonitic attack—that, in many instances of genuine puerperal fever, no intestinal irritation existed at all—and lastly, that gastro-enteric fever itself does not exhibit the phenomena of puerperal fever. Our authors has already shewn that one of the commonest results of vitiated blood is irritation of the hepatic and intestinal functions. This will account for the occasional complication of the intestinal affection with puerperal fever. Dr. F. incidentally alludes here to the danger of exhibiting drastic purgatives in the puerperal state, as they often bring on violent pain and metro-peritonitis.

The Influence of Seasons must be placed in the catalogue of predisposing causes. The coldest and dampest portions of the year are the most fatal, and *vice versa.* This is very constant. Still these alternations of season cannot be the main cause—they can only be influential, since whole seasons pass without any fever of this kind. It has been observed that when the lisease is epidemic here, it is generally so on the Continent.

Hospital Air. On this head there is abundant evidence. The disease is most fatal in such establishments, as they are now managed. "A lying-in-hospital should consist either of a series of cottages, or its spacious wards should contain very few patients." Such a desideratum, however, is almost hopeless, for very obvious reasons.

"With regard to the General Lying-in Hospital,—its locality, rather below the level of the river, and surrounded by a mesh-work of open sewers, fifteen hundred feet in extent, receiving the filth of Lambeth, and some not thirty feet from the wards of the institution, may account for it unhealthiness. It is only after repeated remonstrances that these sources of pollution have, in part, now begun to be obliterated. In the absence of a medical police, nothing but a catastrophe, known under the gloss of a 'strong case,' has the slightest chance of remedy. Public bodies, like the commissioners of sewers, are hampered by their rigid customs, and by the penalties of the law, from coming forward, while individuals have little inclination, and less influence, in making the appeal." 104.

Uterine Injury. It has already been observed that contaminating matters may be introduced into the blood in two ways; by means of the secretions from the uterine wound, or by means of any injury to one or more of the uterine sinuses. The former source is considered to be analogous to the direct insertion of virus into healthy vessels, as after the viper-bite, dissection-wounds, &c. In the second case, "the source of injury is precisely similar to that arising from venesection, where the solid walls of the vein first inflame, and the matter exuded, is afterwards circulated."

"We should expect, *á priori*, that forcible disruption of the uterine veins by manual separation of the placenta—or that long-continued action of the uterus, compressing and irritating the large uterine wound, as in strong and long-continued after-pains,—that instrumental operations, and all such causes as directly bruise or disturb the wound,—would create diseased secretions from the traumatic surface, or irritate its large pendulous lacerated vessels, and so give rise to the phenomena of puerperal fever. These deductions, *à priori*, appear confirmed by facts.

It is well known that the first labour is generally much longer than any subsequent one; consequently we may assume that in first labours, there is more mechanical injury to the uterus than in any other, and, therefore, a more unfavourable state for the healing of the traumatic uterine surface. Out of two hundred and four cases of our puerperal fever tables, more than eighty were first labours.

Again, of the total number of deaths, (amounting to sixty-eight) one-half were patients confined for the first time. These facts prove that the severity of a first labour, or mechanical injury, is a strong predisponent to puerperal disease. Of four hundred and fifty-six cases, Dugés finds that one-third more first labours than second are attacked; and Campbell, that of eighty-five attacked, twenty-nine were primiparæ.

After instrumental labours, in which mechanical injury must necessarily be inflicted, thirty-two cases occurred.

Now, as on an average artificial aid is not required more than once in fifty cases, the fact of thirty-two women being seized after instrumental delivery out of four hundred and fifty-six, clearly shews the influence of mechanical injury in producing puerperal fever. In these cases the injury is not the direct effect of the instruments, for that is known to be very slight and mostly none—but of that state of things which necessitates artificial aid." 107.

Dead children—abortions, hæmorrhages—depressing passions of the mind—insufficient food—suppression of the lochia, &c. may all prove exciting or predisposing causes of puerperal fever.

"I have, in conclusion, to protest against this my attempt being considered as a revival of the follies and errors of humoral pathologists with their four fluid constituents of blood, phlegm, bile, and atrabile; and their cosmic elements, fire, water, earth, and air, their occult causes, and their facile explanations. It has taken nearly 3000 years to convince physiologists that the whole of a living body is alive, and consequently subject to all the impressions and re-actions of the vital power. At first the fluids were the sole seat of life, and then the solids became exclusively gifted; and each hypothesis furnished the root of a branching nosological tree. Latterly, the best modern observers have traced much of disease and morbid formation to disorder in the fluids." 111.

Dr. Ferguson candidly admits that "what he has done he does not consider as new, but looks on it as an attempt to demonstrate what has been hitherto a matter of pure conjecture, and mere opinion." "He has availed himself of the valuable hints and developments in various sources of information, and has endeavoured to probe the views and compare the facts with each other and with his own." He has thus endeavoured to arrive at that great desideratum—"a just theory of this most fatal and most complex malady." In this state then we shall leave the theory in question, in order that it may be put to the test of time and experience. This brings us to the most important chapter of all.

CHAP. V.—TREATMENT.

A statistical or numerical investigation of the various epidemics, in various localities and institutions, gives the melancholy result of one death in every three cases of puerperal fever.

I. PERITONEAL FORM.

Whenever peritoneal pain was evinced, a larger linseed poultice over the abdomen was found beneficial in the Lying-in Hospital, often affording decided and powerful relief.

It should be so thick as to retain warmth for four hours—and sufficiently large to reach from the sternum to the pubes. Where there is obvious indication for venesection, ten grains of Dover's powder may be given when the poultice is applied. A second visit should be made in four hours, when, if the symptoms have been alleviated, a fresh poultice and another powder may be prescribed. If, in four hours, after the second medication, the practitioner is not satisfied that the malady is yielding, depletion must be resorted to at once. The powder may be combined with mercury and aperients, according to circumstances. Numerous cases are detailed, some fatal, others successful. We shall give one as a sample.

"*Case* XX.—Charlotte Crisby, ætat. 18, February 12, 1829. 13th. On the evening of the first day, after a tedious labour, abdominal pain, extending from the umbilicus downwards, attacked her; the pain was constant, increased by pressure; the pulse full; the whole appearance that of a plethoric person; venæsectio ad deliq., about ʒxx were taken away, she did not faint, but the pulse at the wrist ceased for ten minutes. The blood was flat, sizy, and not at all buffed. The crassamentum was firmish; grs. x. Dover's powder every four hours.

14th. In twelve hours from her attack she was free from all pain, but after a

few hours it returned in the right groin, extending all over the belly, up to the very pit of the stomach. It was increased by the slightest pressure, and was attended with painful paroxysms recurring every half hour. Milk and lochia copious; head-ache; pulse 130, feeble: twenty-four leeches. In six hours after this all pain had subsided. Two grs. calomel every two hours; fomentation and poultices.

15th. There was a little soreness; the gums were just touched, otherwise well.

16th. Gums still sore, but no pain any where; well. The milk and lochia natural throughout. MR. CATHCART.

Remarks.—This is an example of the use of mercury, combined with venesection; it is highly instructive." 147.

The following passage we deem it right to extract.

"The following is the sum of my own experience in bleeding as a remedy in puerperal fever:—Of all the means we possess of arresting this malady, I believe bleeding general or topical to be by far the most extensively applicable. The cases in which it is not so, are exceptions to the rule. Mercury, turpentine, emetics, opiates, sudorifics, &c., have a more limited range of utility than abstraction of blood. But while I admit this, I am equally certain, that *large* bleeding has not been borne in this malady, generally speaking, during the last twelve years.

Those who have borne it best and required it most, were—1. Those who were originally vigorous, and in whom no chronic ailment of the intestinal canal or lungs previously existed. 2. Those in whom the fever was accompanied by a general turgor of the frame: their aspect being that of a person who has been flushed by running, and forming a marked contrast with the pinched, shrivelled, and stricken looks of those labouring under the typhoid form of the malady. 3. Those in whom the disease seemed to be limited to one organ.

It may be asserted, with more hesitation, however, that they who are confined out of a hospital, exhibit greater reactive powers than those who are confined in one.

The pulse, as Gordon has remarked, is very deceptive; and the cases I have given, shew that painfulness is no sufficient criterion of the necessity of depletion.

Besides these general indications, epidemic puerperal fever, has, invariably, the character common to the ordinary fevers raging with it: if the latter require depletions, the presumption is, that the former will also.

It is curious, that in the majority of cases bled, the blood is neither cupped nor buffed.

The persons who do not bear large bleedings are those attacked by the ataxic or gastro-enteric forms: even though they be of originally strong constitutions: also those labouring under the complicated form, where many organs are, simultaneously, under the grasp of the diffusive malady. But in this last class there are so many shades of disease, that no absolute rule can be laid down.

If large bleeding be determined on, it must, to be beneficial, be resorted to, within the first twenty-four hours of the attack. In the second stage of the disease it is often, rapidly, fatal. If the bleeding be made early, it may be often repeated. It appears, where it does not remove the malady, to stop its progress, and make it continue lingering in its first stage, so that the repetition of venesection is late, only as to the lapse of time, but not tardy, as to the progress of the disease.

Of local depletion by leeching, it may be said, that the cases in all the four forms of puerperal fever, are very few indeed, which do no permit us to resort to it. It often removes a pain which will not yield to blood-letting. The num-

ber of leeches required will, of course, vary with the case; in some, six is sufficient; in others, six dozen will scarcely be so. But the average cases will require from two to three dozen." 154.

II. GASTRO-ENTERIC FORM.

In this form the local inflammations are slight and transient, or non-existent, whilst the general symptoms resemble typhus accompanied by intestinal irritation. Dr. F. considers the disordered secretions the result of vitiated blood, and not the cause of that vitiation. In this respect he differs from Dr. M. Hall, who attributes the disease to scybala and loaded bowels.

"For some of these cases which are not accounted for from the irritation of loaded intestine, Dr. M. Hall is obliged to assume the effects of loss of blood. But these effects, which that eminent pathologist has most ably traced to the impression made on the nervous functions, take place in this form of peurperal fever where there has been no hæmorrhage." 156.

Dr. F. agrees, however, with Dr. Hall as to the treatment of the malady. He thinks active purgatives inadmissible—and when an epidemic breaks out in the hospital, the usual routine of giving the "black-dose" on the third day after parturition, is abandoned. Where accumulations are suspected, castor oil is the safest aperient, guarded by hyosciamus or hop. General bleeding is rarely necessary. The topical inflammation is best relieved by leeches—and even these sometimes cause fainting. The nervous system is greatly affected in this form of fever, and the constitution soon pulled down. The strength is therefore to be economized.

"The following I have found the most suitable treatment. Get rid of all local inflammations as soon as possible, by leeching or by moderate depletion, so as to reduce the malady into simple fever, with gastro-enteric irritation. When the skin is early dusky, and there is nausea or vomiting, begin with an emetic. If there be no nausea nor vomiting, but intestinal flux, with a red tongue smeared with suburra, a large dose of calomel, from ten to fifteen grs. should be given. Small doses create purging, pain, and irritation, while the full dose produces one to six large pultaceous stools, after which the tongue is cleaned, rendered less red, and more moist, and the pulse usually falls. These stools, when examined, appear to contain the fæcal matter suspended in large quantities of mucus and greenish bile, as if the turgid capillaries of the irritated intestinal canal and liver had been freed from their load. In some instances, a repetition only, of the same dose is required to efface the main features of the malady, and to leave nothing but debility to support. In others, after a short respite, diarrhœa recommences, and soon is apt to become colliquative.

For this state, when the secretions are diseased, as well as copious, a treatment essentially alterative should be used, as a combination of Dover's powder, with a mercurial. When, however, the chief danger arises from the frequency and quantity of the flux, it will be requisite to resort to absorbents and astringents. If the debility be great, wine may be freely given with gruel or sago; where it is not, the strength should be supported by soup, thickened with any gelatinous substance, as thin fluids almost always cause immediate purging. At night, when delirium and night-mare, and fantastic visions torment the patient, a full dose of Batleys's sedative, in camphor mixture, strengthened by a few additional grains of camphor should be given. After the intestinal irritation has abated, tonics may be used, and these are always better borne when ammonia is a chief ingredient." 160.

Several cases are detailed, and comments made by the author, for which we must refer to the book.

III. Treatment of the Ataxic Form.

Great disturbance of function will kill more rapidly than organic changes. The mysteries of the nervous system are yet locked up in Cymmerian darkness! Our author, and every practitioner, have seen death take place in this and other diseases, without any trace being left in the dead body to account for the fatal event. This state was designated by John Hunter—"action without power"—it is evidently debility combined with irritability.

"Our practice, then, in the ataxic form of puerperal fever, if it be, as I believe a malady to which the term 'action without power' is singularly applicable, is to sustain; where there is sinking, the support must be by stimuli, largely and frequently given. Where there is no visible sinking, then stimuli are not indicated, but sedatives, especially the Batley's laudanum, should be immediately given. When the action is equalized and reduced, nourishing food and tonics may be administered." 179.

Cases and remarks follow, with extracts from various authors.

IV.—Treatment of the Complicated Form.

It is only in its slighter grades that this form is curable. "Where it is the leading characteristic of an epidemic, the vast majority will die." Fortunately this most fatal kind of puerperal fever rarely constitutes the whole of an epidemic.

"What treatment," says Cruveilhier,* "shall we oppose to purulent infection? To this question experience is as yet dumb, while theory would seem to point to diffusible stimuli and tonics; to ammonia, quinine, and to sudorifics; to hot external applications; to the vapour-bath; to purgatives, especially to emetics; to tartarized antimony, in large doses; to vesicatories, and to strong diuretics. Calomel has been extensively employed to create a fluxion from the intestinal mucous membrane; but all these means have failed as signally in my hands as in those of others. Yet when the injection of putrid matters into the veins of living animals has been followed by abundant, and very fetid evacuations, they have usually got well. It is a fundamental fact of pathology, that the intestinal canal is chiefly affected in diseases caused by any miasmata. The ancients expressed this truth by saying, that the intestinal canal attracted the poison of febrile diseases. I am certain that diseases, resulting from purulent infection, would not be stamped with the seal of incurability—and that nature, seconded by art, would triumph in the majority of cases—if the pus, which is incessantly renewed, did not incessantly renew the sources of infection." 200.

Dr. F. then enquires if there be no landmarks to guide us in discriminating between the fitness of various remedies, as mercury, quinine, emetics, stimuli, turpentine, sudorifics, blisters, diuretics, &c.? He then discusses the merits of each of these remedies alloting to them their due value, and endeavouring to ascertain the circumstances in which they may be advantageously or injuriously administered.

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* "Art. Phlebite, Dict. de Med. et Chirurg. pratiques."

1. *Emetics.* These, he thinks, are most beneficial when the violence of the disease falls on the liver, and when there is early nausea and spontaneous vomiting.

2. *Purgatives.* "My own experience with regard to aperients is, that whenever they create tormina, there is the greatest risk of an attack of metro-peritonitis succeeding. This so constantly occurs, that I invariably mix some anodyne—usually Dover's powder, or hyoscyamus, or hop, with the purgative." 211.

3. *Mercurials.* Here our author introduces a long dissertation on the action of mercury, derived chiefly from certain lectures delivered by Dr. Farre, and which, amongst some questionable speculations, are to be found many judicious remarks. The continental physicians, as Dr. Ferguson observes, have scarcely any just notions of the physiological effects of mercury on the human system

"'Mercurial action,' says Dr. Farre, 'is positively anti-phlegmonous. If it be pushed far enough, it produces an effect the exact reverse of this phlegmonous state, namely, erythematous inflammation; the tendency of which is to loosen texture, while that of phlegmonous inflammation is to bind texture.'" 215.

Besides this, mercury opens and augments all the secretions and excretions, and thus reduces the whole bulk of solids and fluids. There is a period in most inflammations when we are obliged to desist from the lancet without having subdued the disease. Here mercury is an invaluable agent. The following are Dr. Farre's dogmas respecting mercury.

"'1. Never to give mercury where there is an idiosyncracy against it. The following case is illustrative of the danger of neglecting this advice:—

'A patient of Mr. G.'s, of the Borough, desired him never to give her any mercury, as that drug was a poison to her whole family, to which he, without arguing the point, at once assented. In Mr. G.'s absence, the late Mr. C. was consulted as to some trifling disorder of the bowels, and not knowing the peculiarity of his patient's constitution, prescribed two grains of calomel. The next morning the lady shewed the prescription to Mr. C., saying that she was sure she had taken mercury, as she felt it in her mouth. In a few hours ptyalism ensued; in consequence of which she lost her teeth, her jaw exfoliated, and she ultimately after a succession of ailments, died, in about two years.'

'2. Mercury should be used in all active congestions—Pyrexia, phlogosis, phlegmon, epthalmia, strabismus, cynanche laryngea, cynanche trachealis, pneumonia, and in all inflammatory diseases. In the adhesive stages of dysentery, in the phlegmasiæ, where there is inflammation with power, in tetanus, hemiplegia, paraplegia, neuralgia, in their states of active congestion.

'3. Mercury is hurtful, or doubtful—In the malignant or asthenic forms of pyrexia, where there is low delirium,, but in phrenitis, and in that peculiar form of it, the 'coup de soleil,' it is most effectual. It is hurtful in tetanus from punctured wound, and in all cases of irritable disease.

'In idiopathic iritis, it is as effectual as bark in ague; but in the traumatic it is injurious, as it interferes with the closing of the vessels by adhesive inflammation: hence in all hæmorrhage, where the orifices of vessels require to be closed, it is hurtful.

'In the hemiplegia of lesion, in asthenic paraplegia, in the neuralgia of irritation, it is bad. Loor Pemberton was three times salivated for tic douloureux, and three times the worse for it.

'It is hurtful in the inveterate forms of scrofulous ophthalmia, though useful in the early stage. It is bad in the amaurosis of depletion.

'It is useful in puerperal peritonitis, and hurtful in the typhoid form of it; as also in the ulcerative stage of dysentery.

'In general, it is doubtful in the suppurative stages of inflammation, and in all erysipelatous and erythematous inflammations, or those tending to gangrene. It is hurtful in all cases of pure asthenia from deficiency of red blood." 222.

The oxymuriate is sometimes preferred to calomel.

Turpentine.—Dr. F. has no experience of this remedy. Most patients have an unconquerable loathing of it, and indeed we wonder how any puerperal woman can get it down or keep it down

Vesicatories and Diuretics are useful auxiliaries—the former after proper depletion. Dr. F. has tried Dr. Stevens's celebrated mixture, without effect of any kind.

"There still remain a few points of interest which I will very briefly discuss.—

In the complicated form of puerperal fever, the 'deposits' which take place in the limbs and eye, require much attention in the treatment. If there be constitutional vigour, or if the part be affected early in the malady, leeches may be applied. They are contra-indicated when these disorganising processes appear in frames enfeebled by disease or constitutional causes. Two or three examples are recorded in my tables, where a few leeches applied, late in the disease, caused immediate sinking. The local inflammation is, even in the very last moments of life, exceedingly painful, and seems to demand depletion; but, unless the whole state of the patient be taken into the the account, a dozen of leeches will turn the vibrating scale from life to death.

It is when the eye is is attacked that leeching will be oftenest useful. When the seat of deposit is in the cellular and muscular portions of the limb, it should be covered either with a linseed-meal poultice, or with flannels soaked in decoctions of poppy and camomile flowers. The ease obtained is very great; the swelling subsides in many instances entirely, leaving the limb unscathed; in others it is removed in every part but two or three spots which are found to be puffed out with pus, which should be evacuated. Where deposition takes place in a joint, the treatment by leeching and poulticing, will sometimes arrest its disorganisation: in all it will give ease. But there is a tardy convalescence to be looked for, and, even with the best surgical attention, it is often impossible to prevent the loss of motion of the affected limb.

There is another effect of this fearful malady, which I have remarked, but never seen described. Persons who have recovered from an attack of puerperal fever, apparently of no great urgency, often do not regain health for several months, nay, even for one or two years. Their pulse continues rapid and irritable, and scarcely an evening passes without slight febrile excitement. In some, boils or abscesses break out from time to time; in others, the mucous membrane of the intestinal canal is affected by the presence of a painful spot or by great irritability, and the consequent variation in the quantity and quality of its secretions. In all there is much emaciation.

This state of constitution is often produced after exanthematous fevers, and I have known it occur in two instances after puncture fron dissection. As yet I have seen no fatal termination to this very distressing, and, to the friends of the patient, and the patient herself, alarming state of things. The plan pursued by me, in its treatment, has been,—1. A sustained course of sarsaparilla and mercurial alteratives. 2. The warm bath twice a-week. 3. A change of cli-

mate and the use of some of the foreign mineral waters, selected with reference to the peculiarities of the case.

Besides this insidious state of chronic disorder, there is recorded, by most authors, a more obvious derangement of health, the consequences of the effusion into the peritoneal cavity. In these cases the patient either sinks from hectic, or the effused fluid finds a vent through the abdominal parietes. I have, in some five or six cases, remarked the following coincidence, viz.,—The subsidence of a tumid abdomen, and the evacuation, through the vagina, of sero-purulent fluid, in such quantity, as to give the patient and nurse the notion of the bursting of an internal abscess. On examination I could detect no uterine lesion and no perforation.

Could the fluid, effused into the peritoneal cavity, have escaped through the fallopian tubes into the uterus, and thence into the vagina?" 228.

A considerable number of dissections follow, and several valuable statistical tables, close the work—a publication which few practitioners will fail to peruse and study, after the full and careful analysis which we have presented them. The ingenious theory which our author has adopted rather than invented, cannot fail to excite one reflection—and that not a very consolatory one, in every thinking mind. Over the primary, the essential cause of puerperal fever, we have no control! We cannot prevent the contaminating matter or miasm from draining into the blood—nor can we neutralize or decompose it when circulating through the body. All we can do is to attempt to counteract the *effects* which the poison produces on different tissues and organs of the body—but without knowing any specific remedies for such counteraction! We know, to our cost, that the disturbances and diseases roused into action by the febrific miasm of puerperal fever, whatever that miasm may be, are infinitely more unmanageable, and more dangerous in their results, than inflammatory or other lesions arising from other causes. Thus the practitioner is surrounded with doubts and difficulties on every side, and the theory here advocated is unequal to the task of extricating us from the labyrinth—even by the ingenious clue which it furnishes. It is always best, however, to know the TRUTH, whether that truth disclose or not the remedy for the evil. In taking leave of our highly-gifted author, we tender him our best thanks for the pleasure and information which we reaped from a perusal of his volume. Perge pede quo cepisti.

PRACTICAL OBSERVATIONS ON THE CAUSES AND TREATMENT OF CURVATURES OF THE SPINE. By *Samuel Hare.* 1838.

AN analysis of this book, addressed as it is more to the public than to the profession, would be misplaced; but we will glance at one or two of the opinions of the author.

After speaking of curvature of the spine in general, he treats of the various forms in which it may shew itself, viz. lateral curvature, angular curvature or projection, excurvation, and incurvation. We notice as a defect, that he has not sufficiently distinguished the essential differences between these, but has treated them as mere varieties of the same disease, distinguished from each other rather by the difference of the curve, than by

any essential difference the nature of the affections producing them. Thus, *lateral curvature*, from the tenor of his observations, would seem, equally to be a result of disease of the spine, propely so called, as is angular projection: certainly, he does mention that the latter generally arises from caries, but he does not sufficiently dwell upon the difference of the nature of the former; but rather, by making general observations, which may be applied to either, would lead a reader (and especially an unprofessional reader) to infer, that he considers them, not as distinct diseases, but as varieties of the same; nay, after a careful perusal, we are unable to say, that the author does not consider setons, blisters, &c. as applicable to one of these as to the other. Indeed, the term *diseased spine*, applied to the simply *distorted* spine from lateral curvature, we consider as objectionable confounding it, as it does, with the very different affection usually known by that name, and thus giving rise to erroneous views of its nature and treatment.

Mr. Hare considers, that lateral curvature arises from a soften state of the bones, produced by a prior state of deranged health, and acted upon by undue pressure, whereas it is well known, that at first, at least, the bones are in their natural condition: he lays, also too great stress upon the pushing or compressing effects of the *stays* upon the spinal column and upper extremities, as a *direct* means of producing the distortion: not that this detestable instrument of torture can be well too-much blamed or criticised, but our condemnations and criticism, are forcible and effectual only in proportion as they are justly and judiciously directed: and thus the chief hurtfulness of this article of dress arises, not from the immediate effects of the pressure it itself exerts upon the spinal column, &c., but, from the enfeebled state of the muscular supports of the spine, (the natural stays of the body,) it engenders, by the inaction it obliges. Without pretending to be much versed in the history of the toilet, we think we may assert, that the laces of our modern belles are not drawn tighter than those of their predecessors were wont to be; but ther being less engaged in domestic and active occupations, and more and more sacrificed to the modern mania for book-learning and accomplishments, entailing upon them nearly continual confinement, and most irksome and unvaried positions, will serve to account for that alarming increase of twisted spines observed of late years.

The author's chapter on treatment is but a meagre affair, for besides some obvious directions. as to the attention required for the general health, he seems to confine himself to the recommendation of the use of his "apparatus," which he declares to applicable to the treatment of all kinds of curvatures, and even to the relief of cases of spinal irritation; but how long this apparatus requires generally to be continued—how its use should be modified for some cases, or forbidden for others (if any), he informs us not: and indeed we must infer that, for its succesful application in cases usually considered as requiring very varying treatment, the personal inspection of its inventor would be necessary. We had intended transcribing his description of this apparatus, but for the mere purpose of criticism it is too long, and we will only advert to its nature, and the objects he has in view in employing it. It consists of an inclined plane, having pullies arranged in different directions, to which are attached weights, and straps for making extension between the head, axila, and ankles, and sometimes from one or

both shoulders, while compresses may be so adjusted, as to make the desirable degree of pressure on the projecting spine, sternum, hip, or side, as the case may be. The author thus sums up the objects he has in view: the italics are our own.

"1st. By means of the *inclined plane and extension, to bring* the *bony structure* of the body into as near a form of symmetry as may be, and, of course, *to keep* it in that state.

"2nd. By medical treatment, to improve the general health, *forward the deposition of osseous matter in the bones*, and assist Nature in establishing the healthy functions of each organ.

"3d. By friction and shampooing, *as a substitute for exercise*, (he says elsewhere 'confinement absolutely necessary,) or in some cases by hand-swings, and other gymnastic exercises, *compatible with the first* object of treatment, to develop the muscular structure." 127.

Few, indeed, would be the cases of lateral curvature in which we could consent to condemn a patient to this stretching and pushing practice, considering it as we do, not only as unscientific and injurious in its nature, but also as negatively hurtful, by consuming much time, (many hours daily being passed upon the plane,) which might be employed in well-directed exercises. Even supposing, that by these means the spinal column could be drawn or pushed into its natural position, yet, afterwards, in order to retain it there, powerful muscular supports are as necessary as ever, and in the enfeebled state of the system, found in these cases, these are only to be generated by judicious, varied, regular, but not exhausting execises, followed by simple horizontal repose We doubt whether much goodcan ever be accomplished by machinery after the deformity has become fully formed, while, for the prevention of its progress in the early stage, there can be no question, that to such means we must not resort, but seek by free exercise, and an absence of fatiguing or injurious positions, to avert the threatened mischief. The reader will find some excellent observations upon this subject, in one of Mr. Lawrence's lectures.*

It can never be urged too often upon our medical brethren to use their utmost influence in their respective walks in life, to *prevent*, as far as in them lies, the farther increase of this terrible infliction upon modern refinement. Much may be done by their advice, judiciously given, and *strenuously urged;* often by it they may procure a degree of immunity from corporeal restrain in early life, which will materially aid the frame in resisting afterwards the tyrannic grasp of fashion. The following note of the author is injudicious:—

"It is a mistaken opinion, and attended with some degree of injustice, to attribute the prevailing cause of this extensive and distressing evil to the customs and discipline adopted at public (?) schools: the cause is in operation, and the disease generally commences long before the period at which children are accustomed to leave the parental roof. A remark of this nature seems the more necessary, as the conductors of ladies seminaries have often a degree of censure cost upon them, which they by no means deserve." 66.

Viewing the affection, as we do, as generally resulting from deficient

*Medical Gazette, Vol, VI. p. 612.

muscular exertion, too close confinement, and the maintenance of irksome postures, we are convinced that it very often originates, and is always aggravated, by the discipline observed at ladies' schools, than which, one more destructive to health we cannot imagine: true it is, that parents are ultimately the cause of this, by cruelly and absurdly requiring so much to be taught to their children. That some governesses wish to emancipate themselves from these prejudices we know, but that the great bulk encourage them every body knows: in fact, the present race of governesses, from their total ignorance of the first principles which should direct their physical education, are totally incapacitated for taking charge of our female youth. The crying want in this country is, *instruction for the instructors.*

An observation is requisite upon the proposal for treating the *angular curvature or projection.*

"The necessity of early attention to the treatment of angular deformity will be sufficiently evident from the consideration of the state of the vertebræ: after the softened portion has suffered compression for some time, the bodies become absorbed; ossific matter is thrown out, which unites and consolidates the approximated surfaces of the bones in the position in which they happen to be placed: hence the absolute necessity of attending to the state and position of the spine in the earliest stages of the disease. If the ossific matter be allowed to accumulate upon the vertebræ, while the column is in a distorted form, the process of restoration will evidently be difficult, and altogether inefficient: but if it receive early and requisite attention while in a soft state—if it can be made straight, and kept so sufficiently long for the ossific matter to deposit itself in the vacant space, an anchylosis free from deformity, or nearly so, will be the result." 90.

We think our author will find few medical men who will be willing to follow his suggestion, of keeping a spine, in which a removal of bone has occurred, stretched upon an inclined plane. In the early stages, where antiphlogistic and counter-irritant means are required, to avert or arrest the mischief, although the patient must be kept perfectly quiet in bed, yet who is there would *stretch* him on an inclined plane? Suppose that the disease has advanced, even to the destruction and removal of more or less of the bodies of the vertebræ, who is there, aware that this bone will not be reproduced by insisting upon a forcibly extended position, would frustrate the mode of cure that Nature herself adopts? namely, the falling together and anchylosing of the vertebræ, which bound the chasm above and below, thereby compensating for the loss of substance; but, by these very means, necessitating the angular projection. Suppose the patient is not seen until angular projection has been thus formed, who, by extension and compression, would seek to restore the uniformity of the spinal column, at the expense of risking the integrity of its canal?

In a concluding chapter, Mr. Hare gives us his ideas upon *pulmonary consumption:* want of space prevents our pursuing this subject; but, that his opinions are amply open to criticism, the reader will believe, when we inform him that the author considers the disease rarely if ever hereditary, but as originating in prior inflammatory attacks; that it is a more or less curable affection, while a most excellent preventive consists in three month's confinement to his apparatus, thereby expanding the chest, straightening the spine, and improving the general health!

The author has put forth his book rather ostentatiously, as the result of forty years' experience, given to the world as a kind of duty or legacy; yet, assuredly, of the suggestions it contains, most were previously (or at least suggestions of a similar nature) well known to those accustomed to treat spinal diseases mechanically, while some of them we consider as rather injurious. The book has been injudiciously *extended* from its legitimate size of a two or three shilling pamphlet to a ten shilling octavo, and its *tout-ensemble* impresses us with a fear, that the evil spirit of bookmaking has been somewhat officious in its production. We must not omit to mention that each division of the subject is illustrated by a case, in which the cure of the patient by these means is related; while there are plates representing the state of the patients before and after treatment was commenced.

INSANITY.

I. ELEMENTS OF THE PATHOLOGY OF THE HUMAN MIND. By Thomas Mayo, M.D. F.R.S. &c.

II. TRAITE DES MALADIES MENTALES. Par *E. Esquirol*, M.D.

INSANITY is a subject on which our knowledge is progressive, and on which it requires to be so. An acquaintance with it implies an advanced state of pathological, as well as of mental science. It may be questioned whether either *is* advanced sufficiently to enable us to generalize very boldly, or conclude very certainly, on the nature and the laws of insanity.

But whatever may be the amount of knowledge or of ignorance on the part of those who have made insanity their study, it cannot be concealed that the bulk of the profession are far from well informed upon the subject. If proof of this were wanting, it would be found without difficulty in our courts of law, where the subtle advocate too frequently confounds the hesitating doctor. If one object of journalism is to augment knowledge, another, as important and more easy, is to diffuse it. We shall endeavour to do this in the present case, and, in as many articles as may seem required, to lay before our readers the last and the best investigations into the character and treatment of this frightful malady.

The object of Dr. Mayo would seem, from his preface, to be the exposition of his views on "moral" madness. A difficult part of a difficult subject. It is *in* the profession that some definite understanding must be come to in regard to it. The pleader, the judge, and the jury must ultimately take their tone from us. But at present we have no fixed opinions of our own, and our uncertainty and discrepancies furnish the legal armoury of logic and of dogmatism wielded against us.

Dr. Mayo's views may perhaps be guessed from the following passage in his Introductory Remarks.

"The medical art, is not, as formely, limited to the cure of specific and definite disease; its application is extended widely over our habitual and ordinary

state. This fact is attested by the various works on diet, on dyspepsia, on the hygeine, which flow profusely from the press. But it should be remembered that all that class of physical measures, which such considerations suggest, is calculated to produce a corresponding portion of mischief, unless the concomitant phenomena of mind are duly appreciated. A familiar illustration of this fact may be supplied from the disorders of the dyspeptic class of mankind. The dinner-pill, the careful choice of the most appropriate condiment, and the autumnal recreation of the stomach at Carlsbad, might easily be made to supersede various moral considerations, in smoothing temper, obviating or preventing regrets, and counterbalancing disappointment. But, when it is considered, that a heavy reckoning awaits those, who rely on such paliatives as an adequate substitute for self-control, the admission, that an enquiry into the methods of obtaining this habit, should proceed *pari passu* with the direct physical expedient, will become obvious." 3.

The plan of his work is shortly told.

"A morbid state of mind may be said to exist, either where some property essential to mind in its normal state is perverted; or where some such property is abolished, or has been congenitally deficient.

The first class of those affections, in which these characteristics are found, I shall consider under the term insanity or madness.

The second class, I shall consider under two heads. That of brutality, or absence of the moral faculty; and that of imbecility or intellectual deficiency." 7.

Dr. Mayo wisely declines offering a definition of insanity. It does not admit of one, for insanity is a negative quantity, and the positive of which it is a negation is indefinite. When any one will define sanity, then we will engage to define insanity. Our author having refused to give a definition, proceeds to offer a metaphysical sketch of the phenomena of insanity, which ends, after all, in something very like a definition. For he winds up by remarking:—In regard then to the question, What is insanity? I answer that it is a morbid state, to which those persons are subject, in whom the power of volition is feeble, when they are placed under the influence of certain mental and physical causes. We think it will be admitted that this reply does not greatly elucidate our general idea of the complaint. As we feel averse, just at present, to enter on a metaphysical inquiry, we shall not examine either the proposition or the case on which it is founded.

In his second chapter, Dr. Mayo takes up the consideration of the moral and intellectual properties of the mind.

Following Mr. Dugald Stewart, he classes the moral or emotive properties under two heads:—such as lead to action, and imply an exertion of will, and such as are capable, indeed, of influencing the will, but do not *imply* any exertion of it. The first are active principles, the second are states and conditions of the mind.

"The above distinction is important to my present views, if I am correct in supposing, that the moral causes and preventives of insanity are to be looked for among the passive conditions of the mind.

Thus it is not to the love of power or of riches or of praise that insanity can be directly traced, when it springs up in the course of these several pursuits; it is to the regretfulness, the despondency, the timidity, the anxiousness, some one of which qualities, or of the others above noticed, will be found in the character in which the disease breaks out. The active principles, which may possibly be in play at the time, give occasion to the influence of these passive states; but they are not themselves causative of insanity." 20.

It does not appear to us that this hypothesis meets the case of madness from the gratification of desires. We believe there can be no doubt that a piece of good news has made a man insane. Joy as well as grief has unsettled reason, although triste emotions are infinitely the most powerful. Dr. Mayo makes some good observations on "regretfulness," and on "deficiency of hopefulness," and on "fearfulness." He passes to the moral faculty. We present the following observations on it and on selfishness, because we think them extremely correct.

"I mean, then, to express by selfishness that state of mind, which occasions us to find our enjoyment in any given line of conduct as serviceable to ourselves, and not as serviceable to others. Now this is a state highly predisponent to insanity, since it gives ample food to a noxious principle, which we have already noticed, namely, the tendency to regret and disappointment;—and that, on principles, which will readily be admitted. The wishes of a selfish man, to be a source of gratification to him, require the achievement of some definite object; and this, of course, he cannot always secure. The wishes of the benevolent, on the other hand, are accomplished, sufficiently at least for a large amount of gratification, if he can satisfy his mind, that he has done his best. But it is unnecessary to enter in to any proof of the fact, that our endeavours are more within our power than their success can be. Thus the stoics placed happiness in the possession of their good and wise man, because they supposed him to be concerned only with his pursuits and avoidances, and not with any definite acquisition; justly appreciating the fact, that happiness should be placed out of the reach of fortune, and that nothing is placed out of the reach of fortune except our endeavours.

I have next to consider the relation of the *moral faculty* to the subject of madness. When of sufficient strength to predominate over conduct, it is indeed a powerful antagonist, as lessening the number of our regrets. And this point it effects, not merely by the preference which it may be supposed to produce of right conduct over wrong; but also by contributing to the formation of a general principle, which is very rarely laid hold of by the mind, the principle of acting or abstaining from action because it is right. Men do not readily feel the pangs of regret, when they can refer the point of conduct to *any* settled rule. Dirk Hatterick's regrets were tranquillised by the reflection, that he had adhered to *his* one principle, namely, the keeping faith with his ship-owners. How much greater must their freedom be from regretful emotions, when they find their conduct in unison with a principle, with which the sympathies of human nature are in strict harmony." 31.

Dr. Mayo dwells strongly on the want of sympathy, as an evidence of an insane disposition or state. That the insanely predisposed are peculiarly deficient in this principle, or that insanity tends to weaken it, he thinks probable from the following considerations:—

First, that in the insane there is invariably a diminished state of those natural affections, which require sympathy for their full development, and these are the kindly ones. While, on the other hand, most persons retain their full capacity for the evolution of hatred, anger, and uncharitableness, properties which require no assistance from sympathy.

Secondly, that the supposition affords a practical diagnostic in insanity. In many persons thus situated, in whom, at the time at which the inquiry is made, the reasoning powers are in a clear and sound state, and whose emotions are at the time flowing evenly and quietly, we are enabled to detect disease, by observing, that the patient is not going along, or sympa-

thising with us, or, indeed, with any one extrinsic to himself. Perhaps his conversation can only be characterised as morbid, by its remarkable want of relation to all that is passing in the minds of by-standers. In this point, indeed, the insane are remarkably contrasted with the inebriated, whom, in many respects, they greatly resemble. Persons in the latter state overflow with sympathy, and carry it to a ridiculous and maudlin extent.

Dr. Mayo's theory of the production of insanity would tend to resolve the complaint very nearly into the predominance of triste emotions. It may admit of question whether he has not pushed his hypothesis rather far, but, in the main, we are disposed to think that he is right.

He concludes the chapter by the following brief allusion to "double consciousness."

"Among the more obscure and dubious topics, out of which light may at some future time be shed upon this mysterious subject, the following perhaps deserves a place.

There is a morbid state of the human mind admitted by pathologists, under which the patient lives in alternate stages, as it were of two different beings, in regard to the sequence of his thoughts, and the operations of his intellectual and moral properties. The one is easily recognised as his normal state. It exhibits the ordinary phenomena of his character and habits. In the other he appears to have undergone a remarkable change. He has forgotten things and persons, or views them in perfectly new lights. The current of his thought verges on delirium in rapidity and excitation. Sometimes there appears in him more force and vivacity of intellect in his paroxysmal state, than was observable in his original character. From each of these states he drops suddenly into the other, and he has no clear recollection in the one, of subjects which had interested him in the other. This morbid state to which the name double consciousness is usually given, has a considerable affinity to the intermittent form of madness; so much so, that it seems not unreasonable to suspect that their laws of causation may have some common points." 38.

An allusion to Mesmerism, which succeeds, is, we thing, so far from happy, that we shall not quote it. No amount of merit will be able to support the burthen of the slightest credence in that compound of folly and imposture.

We pass on to an examination of the intellectual properties. These, like the moral feelings, may be viewed as active principles, or passive states.

The active intellectual principles are undoubtedly consistent with mental health, and, rightly directed, are preventive of mental disease. As Esquirol has remarked, the predisposed to insanity require a special education; and were this understood and resorted to, many a case of lunacy would be prevented. Nay, as Dr. Mayo justly observes, the faculty of observation may be made available towards even the removal of actual insanity. No one, who has witnessed the temporary mitigation of insanity produced by the studies, to which this faculty leads, can doubt its efficacy. A flower, an insect, or a mineral, have often beguiled the restlessness of that disease into temporary self-control, when the mind had been previously imbued with a taste for such pursuits.

We agree, too, with Dr. Mayo in the following assertion of the delightful character of literary labour.

"The same remark applies to the active operations of the intellect, which we have formerly made, in regard to the benevolent affections; and it has an equally

close connection with our present subject. *They* do not depend for their gratification upon success in the pursuit of their objects. Their labours are their reward. Probably the happiest men in existence, 'sua si bona norint,' are persons engaged in literature and science, as an employment. It is to be regretted, that they are not always sufficiently aware of the above remunerative points in the nature of their exertions. The reason of this is probably to be found in the extensive tendency of those who conduct the education of our youth to encourage ambition as the principle motive to such exertions". 42.

Probably, the happiest man in existence is he who combines with intellectual tastes and occupations a well regulated morale. The former indeed *tend* strongly to confirm the latter, for intellectual appetites generate knowledge, and knowledge is father to virtue. The pursuits of ambition and of pleasure carry in their stimulus the seeds of exhaustion and disgust. Literary tastes last as long as the mind itself, and please while the faculties admit of pleasure from the objects around us. Contrast the days of Sir William Temple or Sir William Jones with those of Fox or Pitt. As regards the happiness of the *individuals*, how far the two first went beyond the party statesmen!

Dr. Mayo proceeds:—

"There may be, and in some cases I have witnessed, a very beneficial use of intellectual power, in averting insanity, when the patient has been able to apply the resources of his understanding to the regulation of his mind, under a consciousness of his own predisposition. It is needless to observe, that the possession of very high talents is presuposed in him, who can be entrusted with such an application of his intellect. But insanity constitutes no exception to the great law of our nature, which in some degree places in our own hands the remedies of all the diseases with which we are visited." 43.

He quotes with approbation and delight from a beautiful letter of the late Sir James Mackintosh's, in which he ascribes the possibility of such self-surveillance to his unfortunate friend Robert Hall.

"'That the mind of a good man,' he observes, 'may approach independence of external things, is a truth which no man ever doubted who was worthy to understand it; but you, perhaps, afford the first example of the moral nature, looking at the understanding itself as something that is only the first of its instruments. I cannot think of this without a secret elevation of soul, not unattended, I hope, with improvement. You are, perhaps, the first that has reached this superiority. With so fine an understanding, you have the humility to consider its disturbance as a blessing, so far as it improves your moral system. The same principles, however, lead you to keep every instrument of duty and usefulness in repair, and the same habits of feeling will afford you the best chance of doing so.

We are all accustomed to contemplate with pleasure the suspension of the ordinary operations of the understanding in sleep, and to be even amused by its nightly wanderings from its course in dreams. From the commanding eminence which you have gained, you will gradually familiarize your mind to consider its other aberration as only more rare than sleep and dreams, and in process of time they will cease to appear to you much more horrible. You will then be delivered from that constant dread, which so often brings on the very evil dreaded; and which, as it clouds the whole of human life, is itself a greater calamity than any temporary disease. Some dread of this sort darkened the days of Johnson; and the fears of Rousseau seem constantly to have realized themselves.—But, whoever has brought himself to consider a disease of the brain as differing only

in degree from a disease of the lungs, has robbed it of that mysterious horror, which forms its chief malignity. If he were to do this by undervaluing intellect, he would indeed gain only a low quiet at the expense of mental dignity. But you do it by feeling the superiority of a moral nature over intellect itself.'" 45.

There is certainly something infinitely noble and ennobling in the preceding sentiments. And no doubt there is much truth in them. For although it is certain that the causes of insanity are too often physical and uncontrollable, it is equally certain that they are occasionally found in the operations of the understanding, rather than in the structure of its organ.

Dr. Mayo makes Imagination the subject of his Fourth Chapter. His object is to shew that, applied to intellectual operations it is a source of mental health—and, that, linked with the emotive, it is not. This Chapter, and the Fifth, on the Relation of Phrenology to the Science of Mind, we pass over.

But we pause at the Sixth, which is occupied with the Pathology of Insanity.

This is considered by Dr. Mayo under three stages.

In the first stage the deviation from soundness of mind regards moral conduct.

In the second stage the moral incoherency continues; but intellectual incoherency or delirium has also taken place.

In the third stage, recovery from the above states is proceeding;—or the patient is gradually passing into a chronic state of moral and intellectual perversion.

"The prominent features of the first stage are a heightened condition of those moral defects or excesses, which I have noticed among the causes of insanity. The patient is regretful, he is despondent, he is suspicious, he is anxious on the subject of property, or personally fearful in an increased degree. His imagination is probably in an excited state. The points which distinguish such attributes in *him*, from the same *kind* of attribute in one to whom we should refuse the appellation of insanity, are as follows. The extent of his sufferings lose all their accustomed proportion to their causes. The surmises, from which he reasons and converses, are utterly incongruous with those of other men. Thus he is the object of an inconceivable conspiracy. He is noticed and remarked upon by persons, to whom he must be utterly indifferent. A woman of a pure and correct mind will suppose herself in love with some person, whom she has never seen or beloved and persecuted with addresses by such a person. She will be unwilling to go to church, because every thing that the preacher says, is meant to apply personally to *her*. The kindliness of her character is destroyed, and intense selfishness takes its place. Indeed the blunted state of natural affection is a remarkable trait of commencing insanity. The sequence of her actions becomes incongruous and inconsistent. Among all these peculiarities the powerless state of the insane *will* is distinctly traceable. This diagnostic is important in its relation to another disease, with which insanity may be easily confounded; namely, hysteriæ. It suggests indeed this difference of practice, that the hysterical should be treated as far as is consistent with humanity, as if they could avoid or avert their morbid state; a procedure, which would utterly fail if applied to the insane." 63.

It would be difficult to draw the line between this stage of insanity and hypochondriasis. In fact the deviation from what we term sanity up to what is palpably insanity, is so gradual and progressive, that it would be impossible to determine the limits of the several transition states. Take so decided

a case as the one Dr. Mayo has painted, and no one can reasonably doubt its nature. But there are many instances of a more indefinite character, where we feel inclined to pronounce a man insane, yet would experience no little difficulty were we attempt to prove him so. These are the cases which are frequently occurring, ruining the peace and blighting the prospects of families, and often giving rise to protracted and costly litigation. It would be well had we any criterion of this stage of insanity. Unfortunately we have no absolute rule by which we may determine its existence.

Dr. Mayo proceeds to shew, or to endeavour to shew, that this stage of insanity takes its tone from the temperament of the individual—that the bilious exhibit oppression—the leuco-phlegmatic, languor—the nervous, tremor—the sanguineous, fulness. Yet insanity is essentially a debilitating state, and throughout the temperaments, there is a dry and unwholesome state of the skin.

The second stage is next considered by our author.

Inconsequential conduct, he observes, has probably continued for some time, the duration varying in different cases; and now the state of inconsequential thought presents itself. The erroneous impressions, which have influenced conduct in the first stage, and which even then might perhaps have been traced to false perceptions, are now palpably founded on such impressions. As the patient happens to be more sanguine or more nervous in his temperament, so much the more sudden and acute is this change. It is slower, and more gradual in the bilious, and most so in the leucophlegmatic.

This state is delirium, such at least appears to be the sense, in which that term is ordinarily used; namely, as involving inconsequential thought, and false perceptions.

Dr. Mayo endeavours to point out the distinction between the delirium of phrenitis and of insanity. In the delirium of phrenitis and of fever, he says so far as any definite ideas or propositions are formed in the mind, they are inconsequential, and so far partake of the character of insanity. But under the ravings of phrenitis, propositions are rarely constructed. The delirium of insanity disturbs the sequence of ideas, and renders them unsuitable to external objects; but leaves the ideas definite, though erroneous and inconsecutive. Thus the discourse of an insane person will bear to be divided into propositions; that of a phrenitic patient will not. It is a process of ejaculations. Words tumble out casually, and take no logical relation to each other.

The sensations of the insane are rarely acute. They easily pass into a state of exhaustion and of sinking—a fact of great importance in reference to treatment.

The third stage may be said to differ from the second at its commencement in degree rather than in kind. The power of regulating the trains of thought is equally wanting. The falseness of perceptions continues, but the current of thought is flowing less rapidly, and where the case tends towards recovery the patient can be induced to doubt the justness of his perceptions. It is the same with the physical symptoms. Both they and the mental ones experience different modifications afterwards, according to the extent of the disease, and the patient's capacity for recovery. In many the state of quiet desolation with which this stage commences, is permanent. The un-

happy patients are irrecoverable. In many again, this state subsides into what is called a lucid interval. The patient is at first supposed to have recovered. But at the end of a term of weeks, he has a repetition of the second stage; and the disorder proceeds upon this principle of alteration. This is an unfavourable form of the complaint, but not an incurable one. In the more fortunate instances, the powers of self-control are gradually resumed, and the mind regains its normal integrity.

In some instances, the moral symptoms, which our author supposes to form the mental indications of the first stage, are so indistinct as to escape attention. The disease has arrived at its stage of development before it is actually recognized—an argument in Dr. Mayo's opinion, for carefully scrutinizing and rightly understanding the premonitory moral symptoms.

The Seventh Chapter examines the connexion of Suicide with Insanity. We think that the observations we shall quote contain much truth.

"That the tendency to suicide should be an occasional concomitant to insanity might be expected; since the sufferings, which produce this mental disease, also render the possession of life less desirable. It is also true, that insanity facilitates the commission of suicide, by removing in some degree and in some cases the barrier opposed to it by the dislike of bodily pain; since, with diminished susceptibility of bodily pain, the fear of inflicting it upon ourselves must also be diminished. When, however, certain elements of character, such as a quick sense, and an impatience of moral suffering are present in a high degree, or when, existing actually in a lower degree, they are excited and fostered by indulgence; when again these qualities co-exist with a physical indifference to pain and danger, they certainly predispose to suicide, even where no insanity may be present. If external sources of unhappiness are added, or, if physical constitution, such as some forms of bilious indigestion, co-operate, the risk is increased.

Let us suppose a given individual predisposed to suicide by a concurrence of these causes; and let us suppose, that insanity has supervened. It will be observed that the danger of suicide is augmented in the supposed case, or, on the other hand, is occasionally diminished, on grounds, which it is important to trace.

When insanity has proceeded to the extent of obliterating all consecutive thought, the patient is placed under less risk of suicide than he was under before. When, again, the state of insanity is less complete, so that it leaves the operations of thought still energetic, and only destroys our power of self-control,—insanity must then invigorate the tendency to self-destruction, and increase the risk. On the whole, the cases saved from suicide by the obliteration of thought will not be sufficiently numerous to prevent the very frequent co-existence of this act with the mental disease.

This method of viewing the subject of suicide has always appeared to me more philosophical, than the regarding an act so deliberately performed, as it often is, and with so tangible a motive, as involving necessary insanity." 72.

Dr. Mayo goes on to observe that, without the assistance of revealed religion, reason alone has never been able to make out a strong case against the commission of suicide. If unquestionable evils are irremediable, reason can offer no valid argument why they should not be escaped by voluntary death. It is very well to urge that this is cowardice. So it is; but the avoidance of all evils is cowardice in this sense. It is true, that the exhibition of such stoicism as enables a man to bear up against "a sea of troubles" is a noble one, more noble than the spectacle of his escape from

them by self-destruction. Yet this is no conclusive argument—it is an appeal to the moral courage of the self-destroyer, an appeal which he may meet by the counter-affirmation, which every man's feelings tell him has *some* force—"You say that I shew a want of moral courage in flying from misery to voluntary death. But is not self-destruction, that "leap in the dark,' an act of some degree of courage too—a victory over the strongest of our instincts, as well as over our sense of the reprobation of mankind?"

As an argument, it is difficult to parry this defence of suicide. Fortunately revealed Religion becomes the arbiter, and authoritatively denounces as a sin against God, what Reason finds it hard to demonstrate a crime against herself.

If it be true that the inconsistency of suicide with reason is incapable of proof, it follows that suicide does not necessarily imply insanity. For revealed religion will not influence unbelievers nor those who may never have been taught its blessings. Nay, Christrians may believe, and yet incur the guilt of suicide, just as they may perpetrate another *crime;* the incentives to it overpowering the sense of the Divine injunction.

It has always seemed to us that the doctrine which affirms suicide to be itself a proof of insanity, is weak in argument, however beneficial in its consequences. It reasons in a circle, because it makes the terms of the proposition their own proof: "suicide implies insanity, because a man who conquers the instinct of self-preservation is insane." We have already observed that this is far from certain—in fact, the self-destroyer may reply with plausibility—"you who consider mere life the great good, and prefer existence branded with ignominy, or sordid with misery, under all circumstances, to self-inflicted death, have a mere animal horror of dying, and evince a want of the higher qualities of our moral nature, a keen sense of degradation and injustice."

It would not be easy to shew that the suicide of a detected criminal or a patriot persecuted to the last extremity, of a Fauntleroy, or of a Cato, is prima facie evidence of loss of reason. All, in fact, hinges on this assumption—*that*, "the victory over the instinct of self-preservation is so contrary to nature as to imply the fall of reason." There is, alas! some force in the arguments which go to shew that such a victory is, occasionally, Reason's triumph—a step from the brute, not towards him.

If the principle that suicide implies insanity has become universal in practice, it is, we fancy, because experience has shewn the inutility of the contrary doctrine. while humanity has revolted against its barbarous consequences. The cross-road burials, the torches, and the stakes of a less enlightened age are too skocking for the refinement of the present. Suicide is a crime against God rather than man, and the unhappy perpetrator of the dreadful act should be left to the mercy of his Almighty Judge.

Dr. Mayo offers the following summary of considerations in reference to suicide:—

The suicidal tendency belongs principally to the bilious temperament.

It is rarely found in persons of personal timidity or of moral courage.

It is remarkable for the intensity with which it operates, when developed in the insane, and for the address with which it masques its measures.

Accordingly, it increases the difficulty of treatment, whenever it co-exists with the insane state; and nothing but the most watchful attention can de-

feat the manœuvres by which the unfortunate patient endeavours to attain his purpose.

"One of the first points," he continues, "which require consideration with this view, is the quality and kind of false perceptions occurring in a given case. Some lunatics will be found adopting their daily line of conduct, or again changing it, in reference to certain voices, which appear to dictate to them. Such persons are liable to carry into effect whatever measures are uppermost in their own mind, since these measures derive oracular force and influence from being conveyed, as it were, into their ears by their invisible companions. Through questions adroitly put, as to the communications thus made to him, the patient's own intentions may often be obtained and anticipated. And this leads me to notice a rule of practice extremely important in regard to the general interests of the patient, as well as to our present topic. In discussing with him his false perceptions, while we assert, that he stands alone, or, as was well expressed to me by an insane person, that he is in a 'minority of one,' in regard to them, we must be cautious, how we deny their reality, that is, their reality in regard to his perceptions, and much more how we deride him. By neglecting this rule, we often lose a valuable means of ascertaining the springs of action, by which he is influenced, and thus of defeating improper designs, and generally we diminish his confidence in our promises and assertions. For the lunatic is not likely to feel this confidence, if feelings which are important to him, are derided; and if phenomena, which present themselves to *his* senses, are ascribed to his imagination. Meanwhile, the existence of this confidence is perfectly compatible with a distinct assertion, and protest on the part of the physician or the friend, that *he* does not participate in those views which the patient describes as his own. When this relative reality is admitted, the sufferer is induced to accept the assurances with which they are accompanied, and to believe, that they may at some future time turn out equally correct in other points." 79.

Exuberant gaiety in one whose ordinary state is extreme depression is ominous. The patient has, perhaps, confirmed his resolution for self-destruction.

Dr. Mayo alludes, but too cursorily to render it necessary to follow him, to the homicidal tendency, occurring without an intelligible motive.

The Eighth Chapter is dedicated to the preventive treatment of insanity by mental means. Like M. Esquirol, our author dwells on the advantages of judicious early mental cultivation. But we pass to the period when the disease is actually commencing. Surveillance is necessary. The following are Dr. Mayo's precepts:—

"Do not scold your patient. He wants an opiate at your hands; and as the drug itself rarely agrees with him, you must give it him in a moral form. Endeavour to relax the tension of thought, and feeling. Help him into listlessness. Meanwhile, though you argue no point with him, remember, that you must concede no measure. The more resolved he finds you, provided your firmness is tempered with kindness, the more he will rely upon you. He needs your support against his own vagueness and instability.

Check your patient, and teach him to check himself, at moments at which he is endeavouring to secure too large a measure of positive enjoyment. The measure of enjoyment, which every man should consider appropriate to his case, is just as much as can last its time, without occasioning nervous excitement.

If your patient is regretful, let him accustom himself to assume that the recurrence of regretful feelings is a law of his constitution; and to consider the

of each re-action, as commensurate, not with its reasonableness, but with strength of the impulse, under which he had previously acted or resolved act." 96.

When actual delirium supervenes, separation becomes indispensable. Nor need we dwell on its advantages. With the third stage come, observes our author, the tempora fandi; the opportunities of an effectiver emark, must be observed with watchful attention. Suggestions vividly and pointedly made of incongruities of thought and conduct often appear to rouse the patient into a consciousness of his state. His mind perhaps darkens again, but the vestiges of an impression thus made are often observable in his subsequent conduct. Many such alternations of light and darkness occur during convalescence.

Dr. M. thinks that a valuable influence may be obtained from the operation of of sympathy. It has occurred to him, in many instances, to observe the effect of a well-regulated mind upon the convalescent insane, when that mind is furnished with the curious tenacula of sympathy, which seize and hold under their influence the minds of others. Instances, however, have occurred, in which the influence has been reciprocal. Dr. M. relates a case in point. An anxious and attached wife had maintained a long-continued intercourse by letter and conversation with her insane husband, who resided at a private establishment. This gentleman had passed into the third stage of his complaint; and there continued. He required but little surveillance, and united in a remarkable degree his original capacity for clear thought and sagacious reflection with the rapid and erratic associations of insanity. The lady herself, though nervous by temperament, had a sound and strong understanding. In talking with her, however, it is easy to see, that the sequence of her thoughts, and the links by which they are connected, have been influenced by the habitual contemplation of a morbid mind. Their mental relation has indeed become that which is expressed by the terms "ils s'entendent."

"There is much skill," continues Dr. Mayo, "required in the management of the insane, in observing a distinction between those ideas, which belong to his disease, and those, in regard to which his mind is *at the time* not insane. The power of control over the train of thought sometimes returns very suddenly; and it is of immense importance, that the chain thus recovered should not escape the patient's grasp. Now, whatever modes of thought receive the sanction of a judicious medical attendant, are by this circumstance in some degree recommended to the attention of the patient, provided his sympathies have been secured. Thus his recovery becomes valid in his own eyes, when countersigned, as it were, by the opinion of his friend.

A patient, who had been insane for three years, and had spent a large portion of that time at the establishment at Ticehurst, had passed into a state of alternate lucid intervals and paroxysms, each of these states successively-lasting for some weeks. At the commencement of one of these, he announced to Mr. Newington, the proprietor, of the establishment, that he should never have another attack. On learning this, as well as that he had never before made any similar remarks, I went over to Ticehurst; and formally stated to the patient, that I accepted with pleasure his announcement of his recovery; that I believed he was correct in his supposition that it had taken place; that nothing more remained, than that he should give himself and me some proof of the soundness of his own impression by spending a portion of time, which I named, at the establishment. This patient never relapsed. 103.

Dr. Mayo's sentiments on the physical treatment of insanity are judicious. They apply to the use of depletory agents—of tonics—of sedatives—and of counter-irritants. He joins in reprobating that extreme depletion, which, we fear, is too often practised in mania. He relates a striking instance of the possible bad effects of even a small loss of blood. It was the case of a middle-aged lady residing at an establishment, in whom the disease had continued for some time in its first stage; the application of a few leeches to the temples, which her dull and oppressed look and robust figure seemed to indicate, as, at least, a safe measure, gave a very mischievous development to the disease. She became instantly very delirious, laughing and chattering incessantly, and in this state, Dr M. found her about four months afterwards. He relates another case in the patient's own words as a sample of one in which depletion would probably have been injurious.

A lady had, by Dr. M.'s direction, taken some mild alterative aperients, and a cordial mixture for six days. "I still feel," she says, "a whirl about my head. I should describe it as if it felt too tight; and express the feeling, as if air got in and made a whistling or rushing about my ears; *or I could fancy it voices talking to me.* I feel a reluctance to apply to anything; to work a sum with my children seems too great a strain on the forehead; and I forget as soon as I have read a page, or indeed any conversation; even, if I desire it to make an impression. I once, many years ago in 1818, had a slight illness in Paris, and possibly from over-excitement a tendency to imagine things different from what they really were. This always made me most anxious during my confinement, and at other times, to keep myself as tranquil as possible. I never had any return. But have for some time felt unwilling to attempt mental exertion. I remember, once at ——, taking some bark and cayenne pepper; and it seemed to clear my ideas and to make my mind more collected." The lady was a fine person, aged about thirty-five, of a full but flaccid figure, her temperament leucophlegmatic and nervous; but, living in a very bracing air, she kept herself in a state of fullness, which might easily simulate the robust sanguine constitution. She had had several children; and her mind was kept on a stretch by domestic cares. The catemenia were free in quantity and regular. Now in this case, the lancet, if used for the above congestive symptoms, would have had a very mischievous effect on her powers of self-control.

Moderate depletion is well borne by the melancholic. But free venesection may convert quiet melancholia into delirium.

In the case of a young lady, the accidental taking of a drachm of nitrate of potass by mistake for a scruple three times a day for a fortnight, which produced bloody evacuations and obstinate vomiting, appeared to operate most beneficially in the disease. It subsided with going into its second stage, and has never recurred.

Dr. Mayo considers tonics valuable in the first stage of insanity, in the serous and the nervous temperaments, mischievous in the bilious and sanguineous.

In the second stage tonics are inapplicable, whatever may be the temperament of the patient.

In the third stage, they are valuable in every temperament. with this reservation, that their use in each should be cautious or bold, in the same

proportion, as it may be noxious or salutary in the first stage of the disorder under that temperament.

Of course Dr. M. speaks well of purgatives. And he concurs with the best practitioners in extolling sedatives.

"The intention of sedatives is in every stage of the disease a wise one. By soothing the insane patient, we at once give him wholesome strength, and reduce morbid action. Of all the medicines which possess this virtue, opium has been in my experience the least valuable, and digitalis the most so. The following recipe I have found very useful in the second stage of the sanguine or sanguineo-nervous temperament. Mixturæ camphoræ ʒxij.; potassæ nitrat. ℈j.; tincturæ digitalis ♏xv. M. fiat haust. ter quotidie sumend." 117.

Dr. M. speaks disparagingly of opium—commends the extracts of henbane and lettuce, combined with camphor in small doses, and with the compound extract of colocynth—lauds the infusion and tincture of hop—and leans dubiously to counter-irritation, particularly in the bilious, leuco-phlegmatic and sanguine temperaments.

The Tenth Chapter is occupied with Brutality. This was the subject of a former essay by the same author. The name is retained—the thing is described as before—but the view in which it is regarded is altered; for he *did* look on it as a form of insanity, while he *does* regard it as destitution of principle. We must say that if brutality is to be deemed insanity, there is no crime so monstrous, no deviation from the path of natural feeling so wide, as not to claim the privilege of the same plea. Tiberious, Caracalla, would cease to disgust—they would become objects of pity. The executioner might burn his halter, our criminal courts might be turned into lunatic assylums, for the great criminals, the Thurtells and the Greenacres, would no longer be the victims of offended justice. Our penal code would be almost limited to petty larcency and shop-lifting, and with the progress of science, even these would be found at last to be only forms of madness. Take Dr. Mayo's description of brutality, and see if it be not what is usually deemed a vicious tendency unchecked by proper education, or ripened by indulgence.

"We have a class of persons, differing from the majority of mankind in their incapacity for moral distinctions, differing from the insane, in not laboring under any suspension of the power of will. On the first of these grounds they have a right to a place in our system of mental pathology. On the last, they must constitute a distinct head from insanity. I am not at present considering this class generally; I exclude indeed that section of persons, in whom the absence of principle is obviated by the harmlessness of their tendencies. I am speaking of persons destitute of the moral faculty, and *also* vicious in their propensities. For these I have borrowed the designation given to them by Aristotle; and I call them *brutal*.

In regard to the principles on which this morbid condition may be treated, the law, it may be observed, greedily takes advantage of its co-existence with insanity, whenever this occurs, and it readily does occur, to control the unsound habit of mind, but has not hitherto been able to grasp it in its own form. Although in truth, the state which we term brutality spreads as wide devastation as insanity would, if insanity were left uncontrolled; and is, according to the above view, equally disease of mind." 128.

If it be difficult to determine the existence of insanity in its usual forms how impossible it would be in practice to draw a line between "brutality" and vice or crime. The latter is punishable in a sane man, because the

exercise of reasons enables him to perceive that it is culpable, and that the laws of society denounce it. Has the "brute" this power of reflection and of estimation of consequences, or not? If he has, he is a responsible agent —if he has not, that can be proved by aberrations of reason.

Dr. Mayo seems to hint that the law might reach brutality. But if brutality be rational how can any law reach it? The law cannot *punish* tendencies. How are they to be determined? Only, we presume, by acts. But if acts be culpable they are already punishable by as strict a code as the circumstances of society permit. If they are not culpable, we do not see how the law can grapple with them. Law must define, must say what it will and what it will not suffer If it did not say this, none would be safe; the powerful would escape—the weak would be hunted down. No doubt there are acts without the scope of law which are offences against our moral sense, and even injurious to society. But there are punishments, as well as crimes, independently of those with which law deals—acts which entail retribution in a thousand ways—which make the tyrannous father suffer from the disobedience of his child: the harsh husband from the indifference, the drunkenness, or the infidelity of his wife: the proud or the imperious man from the desertion of his friends. We are sure that it is impracticable for law to deal with any thing but facts, or to regulate soceity and repress vicious tendencies, connate or acquired, by any other means than the punishment of those acts which she denounces.

Dr. Mayo adds;—

"It is indeed time, that the disgraceful scenes should terminate, which are now occasionally enacted at the public offices in London; where a father is heard requesting that an ignominious punishment should be inflicted upon his son, as the only moral expedient which can reach him; and thus finds no other mode of obviating the deficiency of principle than the *penal* inflictions of the law. But it is yet more painful, that the offender should be allowed to wander on through crimes and inflicted misery, until he reach this goal. An instance of such a termination to the course of the brutal person is afforded by the unhappy Lord Ferrers. That nobleman was not *insane* in any customary use of the word; his intellectual faculties were good; and they were directed by a powerful will towards definite objects: neither did he exhibit that moral incoherency, which we have described among the earliest phenomena of the insane state. The business-like talents, indeed, which he displayed in his own defence, indisposed his judges to allow him the advantage of *that* plea. But his brutality made him unfit for *social* existence: the laws of this country did not reach him as a subject for confinement. Therefore he was hanged. This procedure was unavoidable under the circumstances of the case, and in the present state of our laws; but it constitutes a painful fact, considering, that education at present affords no preventive to such criminality." 132.

We do not think that Dr. Mayo proves his case. Brutality, such as he describes it, does not seem to us to require, on the part of society, the shield of insanity against legal consequences, nor to merit it on the part of the individual. If "brutality" were allowed that defence, it must be extended to almost all the ramifications of violence, of passion indulged, and of evil propensities uncontrolled. The case to which Dr. Mayo refers—that of the father and son at the police-office—is frequent enough no doubt. But it shews no more than that the father has educated that son amiss, and that

bad associates, and corrupt habits, have completed what parental mismanagement began.

Unless it can be shewn that vice is attended with deficency or alteration of the reasoning faculty, it must, and for the interest of mankind, it ought to be held responsible for its mis-deeds Education tends to prevent it. But moral education is a private affair. The state cannot take each child from the cradle, and regulate the nursery or parlour. That must be left to parent and preceptor. If they fail to pluck out the seeds of wrong doing, and allow them to germinate and ripen, woe to the unhappy being in whom they have been let grow, for his only safeguard against himself is his terror of the strong arm of insulted law. This, indeed, is admitted by Dr. Mayo, and, making that admission, he withdraws "brutality" from the pale of irresponsible mental infirmity, and places it, where it ought to be placed, within the catalogue of guilty things.

The Eleventh Chapter, on Idiocy, congenital or acquired, presents nothing of moment. It is more easy of appreciation than some other forms of insanity. The degree of deficiency of intellect which constitutes it can only be determined by special examination in each particular case.

The Twelfth Chapter is intended to supply some omissions in its predecessors. *They* cannot be considered by our author great, for *it* is extremely brief The only passage that we think it necessary to introduce is the following:—

"In describing *medical* treatment I have to regret a very important omission; namely, the use of nauseating remedies in this disease. The large doses in which ipecacuanha and the tartrate of antimony are borne by the patient, without exciting the effort to vomit, and the decisive effect which they produce in shortening and mitigating the second stage of the disease, entitle them to the highest attention. In recommending measures that may tranquillise the insane *mind*, I have omitted the important topic of *employment*. This, indeed, if cautiously managed, conduces to tranquility. Gentle manual employment is of great avail in divering mental irritation; and in this point the habits of females give them a valuable advantage. Of the intellectual faculties, that of observation may be cultivated with the greatest advantage; it does not *imply* the continuity of action, which easily runs on into incoherent thought in the insane intellect; and it tends gradually to wean such an intellect from false preceptions." 152.

We take our leave of Dr. Mayo. His little work will repay perusal. It cannot be considered an elementary treatise, but it contains many judicious reflections, and the reader will probably rise from its perusal better qualified and more disposed to study the mental phenomena of insanity, and to regulate the insane.

II. ON HALLUCINATIONS.

These form the subject of the second essay of M. Esquirol, and occupy forty-three of his pages.

There is a certain form of insanity in which the individual believes in the reality of impressions, sometimes transmitted by one sense, sometimes by another, at a time when no external object really exists to give rise to them. One persons hears voices, questions, replies, keeps up a connected conversa-

tion, is insulted, threatened, has orders addresssd to him—he disputes, grieves, or gets into a passion—is saluted with celestial harmony, with the warbling of birds, with a regular concert; but the sounds are all the while imaginary, and silence reigns around him.

Another gazes on the most varied scenes, sees the Almighty himself, sits at a play, greets the familiar countenance of a friend—or a precipice yawns before him, armed foes are there to assassinate him, serpents are hissing to devour him, and this individual is in darkness or in blindness.

A person in this state sees a car of light waiting to bear him to heaven; he opens his window, steps forth to enter it, and is precipitated, of course, to the ground. Darwin relates the case of a student, who, one day, returned home with haggard face and distracted look, and assured his companions that he would die in 36 hours. He took to his bed, made his will, and composed himself for death. Hufeland was called in. He ordered a dose of opium, under the influence of which the young man slept for more than the 36 hours. On awaking he was convinced of his hallucination, and owned that on going out on the day when he was attacked he had seen a death's head and heard a voice say to him—"Thou wilt die in thirty-six hours."

A third patient requests us to remove the unpleasant smells which annoy him, or he is delighted with their exquisite fragrance. Yet there are no odours, nay the patient lost his sense of smelling prior to his illness. Or he is obliged to bite arsenic, to eat earth—flames scorch his mouth, or he quaffs ambrocia, or tastes the many viands of an exquisite repast.

Some feel points, or arms, perhaps wounding them. They think that they have been beaten, nay, show the imaginary bruises on their bodies.

Thus these patients believe in the presence of persons or of things which either do not exist, or are absent. Such persons are in a state of "hallucination."

M. Esquirol draws a distinction between hallucinations and the false perceptions of delirium. In the latter case an erroneous perception results from the impression of some object on the sense. A windmill, for example, is mistaken for a man. But in hallucinations, no real object impresses the sense at all. The idea originates within. Hallucination is therefore a mental act, accomplished independently of any present operation of the senses. There are many famous instances of men having displayed hallucinations, who evinced no other symptom of intellectual abberration.

The subject of hallucinations, like the dreamer, is so occupied with their consideration, that he cannot divert his attention from them. The habit of associating sensations with the objects that give rise to them, and this absorbing contemplation of the dominant hallucination, both conspire to convince the patient of its reality. He no more doubts it than we doubt a dream, while it endures. Hallucinations too, like dreams, as they draw on the memory of past impressions, always reproduce them. The series of images and ideas is occasionally regular; more frequently it is a strange association of them. Sometimes the individual is conscious that it is an hallucination which engages him, and yet he cannot shake it off.

Those who labour under hallucinations differ, for the most part, from somnambulists in this respect—that the latter remember nothing when the fit is over—while the former recollect all that they have undergone.

Hallucinations differ from ecstacy. The latter is always occasioned by

some great effort of attention, in which the mind has been fixedly bent on some particular object or train of ideas. In ecstacy, so intense is the concentration of the nervous energy, that it absorbs all the powers of life, and all but imagination is suspended. It is otherwise with hallucinations. An augmented action of the nervous centre, rather than a violent effort of attention is requisite; and all the functions are performed with more or less regularity. The patient lives in the midst of his hallucinations as he would have lived in the midst of realities. The hallucinations influences the thoughts, opinions, actions of the patient, who reasons on it as a truth.

When witches were burnt, many chose their stake rather than deny their guilt. It requires but a slight acquaintance with the history of witchcraft to know, that numerous unhappy wretches believed that they possessed the powers ascribed to them. M. Esquirol has known many persons who had been affected with hallucinations, remain, after their recovery, convinced of the reality of what they had seen or heard. "I saw and heard it all, as plainly as I see and hear you now," said a quondam *hallucine* to M. Esquirol. The hallucination affects him just as a corresponding truth would—he is convulsed with laughter—elated with joy—or sunk in hopeless melancholy.

The hallucination may present a constant character, or may range over the objects and ideas which memory calls up. When this is the case, the actions of the individual bear a corresponding impress of versatility. The same thing happens in some instances of mania, as well as in febrile delirium.

In reference to the seat of hallucinations, M. Esquirol places them, naturally enough, in the nervous centre—in some disturbance, primary or secondary, of the brain.

Hallucinations usually relate to the corporeal or intellectual occupations of the patient: or they display an evident connexion with their cause. Thus, a female reads the histories of witches, until she believed that she officiated at their sabbath, and witnessed all their orgies. A lady read the execution of a criminal—every where she saw a bloody head, wrapped in black crape. It always appeared above her left eye, filled her with unutterable horror, and drove her to several attempts to suicide.

Hallucinations may be the consequence of habitual exertions of the brain upon any particular topics. The mind accustomed to a certain train of thought, habitually falls into it to the exclusion of the present impressions of the senses, and this may go at last to the extent of actual hallucination. The *hallucine* presents the same *absense*, which characterises the meditative man of the soundest mind.

Love and religion being the sentiments that actuate the human breast most forcibly, the hallucinations of erotic and religious monomania are naturally the most frequent and the most remarkable.

Hallucinations occur in persons who have never been deranged; but they are also one of the elements of derangement, most frequently observed in mania, melancholia, ecstacy, catalepsy, hysteria, and febrile delirium. Out of a hundred insane, eighty, at least, have hallucinations.

Sometimes this symptom exists long before insanity is evident. Patients frequently struggle against it, while their conversation and their actions yet present no obvious deviation from propriety. Occasionally, the hallucinations are transitory and confused at the commencement, and only assume at

a subsequent period a character of fixity and distinctness. Not uncommonly they remain after the derangement has ceased. In derangement of the most general character, the patient will all at once, perhaps, in the midst of an animated conversation, stop and fix his eyes on the imaginary object, or reply, to the ideal persons whom he hears. This may be observed, more or less, in almost all cases of derangement. But those individuals are particularly prone to it, who, before their illness, were influenced by some predominant passion, or subjected to great mental dis urbance, especially if addicted to abstruse and speculative inquiries. M. Esquirol, indeed, admits that hallucinations are most commonly observed in persons of weak minds; but those of the greatest vigour are by no means exempted from them.

The hallucination may be confined, as has been already hinted, to one sense, or it may extend to two, to all. The *halluciné* has been often looked upon as one inspired. In Germany he is still regarded as a seer. Many of the pretended prophets of the East, and we may add many of our own day in the West, are but the subjects of hallucinations. Subtracting the cheats, these are the remainder.

Hallucinations arising in impressions produced on the sense of taste or smell, are more particularly observed at the commencement of madness. Those connected with sight and hearing are common to all periods of it. The hallucinations of sight have popularly received the designation of visions. The term cannot be applied to any but visual hallucinations; yet those of smell, hearing, taste, have all the same generic character, own the same causes, have the same cerebral seat, occur in the course of the same diseases. It is on this account that M. Esquirol proposes the generic term *haliucination* as their representative.

Hallucination being only a symptom of intellectual derangement, and common to many forms of it, require no special treatment. But their precise character must necessarily tinge the features of the disorder, and the moral and intellectual treatment which it requires.

On the Illusions of the Insane.

Such is the title of the next chapter, or essay, of our author.

Illusions differ from hallucinations in this—that the former are false perceptions of real impressions on the senses—the latter, as our readers already know, being unconnected with present impressions on the senses altogether.

Certain illusions of sense are compatible with sanity of mind. Thus, a square tower seen from a great distance seems a round one; but then the error is dissipated by the diminution of distance.

Hypochondriacs have distorted perceptions of internal sensations. The intensity of their sufferings, their dangerous condition, are illusions. Yet hypochondriacs rather exaggerate impressions, than distort them in such a manner as to be inconsistent with reason. Decided melancholia indeed may be grafted on hypochondriasis, and then, of course, there is actual derangement of ideas. Hypochondriasis is, after all, but a minor degree of melancholia, and it is difficult to draw a definitive line between them.

Accurate perception implies three conditions—integrity of the organ of sense—integrity of the nerve which transmits the impression to the senso-

rium—and, finally, integrity of the sensorium itself. Illusions, which are false perceptions, may result from the disturbance of each of these conditions—from disorder of the organ of sense—of the nerve—of the encephalon.

If, in mania, the attention is insufficiently fixed on objects, and the mind wanders rapidly from point to point, the impression which they make is of necessity imperfect, and illusion the result. In monomania, the same effect results from a precisely opposite cause. There the attention is concentrated on a single object, its properties are magnified, comparison with other objects does not come to rectify the error, and exaggeration and caricature are the consequences.

The passions lend a liberal aid in the creation of illusory ideas. The source of so many illusions of the sane, how can they fail to modify the sensations of the insane? In point of fact, they are the parents of a thousand false perceptions in the latter

As illusions may result from impressions felt within, or received from without, M. Esquirol divides them into ganglionic and sensible—those arising through the medium of the ganglıar system, or of the organs of sense.

M. Esquirol relates several cases in illustration of each, but, with the utmost deference to his authority, they appear to us to be rather instances of the contrary of what he cites them for. As an example of illusions from internal sensations, he brings forwards the case of extreme sensibility of the skin which is dry, harsh, burning, and incapable of properly performing its functions. An insane person, with such a state of skin, imagines that a touch is a blow, or a burn, that those around him are endeavouring to wound or torture him. But surely this is an illusion founded on deranged action or an altered condition of an organ of *sense*—the skin. The same objection lies against most of M. Esquirol's other cases, and however valuable the work of this gentleman may be, it displays, in common with these of most continental writers, a singular inconsequentiality of reasoning, and a strange mixture of accuracy and laxity of observation. We have often been struck, on perusing foreign works, with this circumstance. In a train of ratiocination, or of observations, the premises are arranged in the most methodical form, the necessary conclusions seem on the very point of appearing, when, presto, come some extraordinary inference, totally at variance with all that went before, and diametrically opposed to the very train of reasoning it is placed amongst.

M. Esquirol relates several cases in which pain in various parts of the body gave birth to different illusions. We will notice one or two.

Case. Mademoiselle ————, aged 18, had enjoyed pretty good health, although her menses were irregular, when in 1815 she began to suffer from a fixed pain in the vertex. She soon persuaded herself that there was a worm devouring her brain. The sight of copper almost made her faint, and her relatives were obliged to remove every gilt ornament from her apartments. She was with difficulty induced to walk out, the dust raised by the passengers seeming to her charged with oxyde of copper. After several months of ineffectual treatment, M. Esquirol was consulted. She was attenuated, very irritable, sometimes refused to eat, slept badly and laboured under constipation. She spoke of her aversions, sometimes with

anger at other times with tears. M. Esquirol won her confidence by sympathising with her feeling, and persuaded her that he could cure her and had cured others by a trifling operation. The young lady was so excited, that after a visit from M. Esquirol she made an incision into her own scalp with a penknife. M. E. was summoned. The young lady requested the performance of the operation he had proposed. A crucial incision was made over the seat of pain, and a fragment of fibrine was shewn to the patient with the assurance that it was the worm. An issue was then established and kept open for three months. The illusion on the subject of the worm and the verdigris soon disappeared.

Another case was not so fortunate. A countrywoman was admitted into the Salpetriere, complaining of acute pain at the vertex, which she attributed to the presence of an animal. She had fallen into melancholia, with a tendency to suicide. M. Esquirol made a crucial incision over the painful part, and shewed the patient a piece of an earth-worm, which he assured her had been the cause of all her sufferings. The patient, in her joy at being cured, shewed the worm to her companions. They laughed at her for her credulity, which made her so furious that she refused to submit to the establishment of an issue, her old pains returned, and the illusions were re-established with them.

M. Esquirol opened the body of a woman at the Salpetriere, who had laboured under melancholia, and asserted that she had an animal in her stomach. There was cancer of that organ.

Another female, who, after an illicit amour with her master which was followed by an accouchement, experienced much dejection and frequent gastro-intestinal disorders, turned devotee. She ultimately became maniacal, and entered the Salpetriere where she lived many years. She believed that she had Pontius Pilate in her belly, and occasionally he was joined there by all the personages of the New Testament, and indeed, of the Old. When the pains were more than usually acute, she quietly announced that she heard them nailing Jesus Christ to the cross. On examining her body, the abdominal viscera were found all matted together, and the peritoneum was greatly thickened.

Irritation, pains, or lesions in the generative organs, are the present sources of illusions in the insane, and more especially in women. They have led to mutilations of these organs. Females labouring under erotic monomania imagine themselves in the arms of their ravishers or lovers—or conceive that the devil, or that serpents are entering their bodies through the external organs. Cancer and ulcers of the uterus are not uncommon in these patients.

The vague pains that the insane experience in their limbs may lead to illusions of a very distressing character.

At the Charenton, there is a monomaniac, aged about thirty years, who believes that, every night, he is led to the cellars of the opera, where knives and daggers are plunged into his chest and back, his limbs amputated, and even his head cut off. If it is observed to him that this cannot be, for his head is still upon his shoulders,—"ah," he cries, "my persecutors are magnetisers, free-masons, who have the secret of fitting the amputated parts on again." Any further remonstrance only leads to violence. "You are leagued with them. Kill me, kill me. I cannot go through my cruel sufferings."

The illusions of the senses are striking. If the lunatic hears a noise, it is of voices addressing him—of friends flying to his rescue, or of enemies rushing to his destruction. M. Esquirol attended a lady whom the slightest sound threw into a paroxysm of terror. She trembled at the murmuring of the wind, and the noise which she herself made in bed alarmed her to such a degree, that she would rise and scream for assitance. She was got to sleep by having a light burning in her chamber and an attendant to watch over her.

The sight, more particularly, breeds these idle fancies. Nothing more likely, for sight is the great sense.

A lady, labouring under hysterical mania, was constantly at the window of her apartment. Whenever she saw an insulated cloud she cried to it, "Garnerin, Garnerin, come for me." She mistook the cloud for one of Garnerin's balloons.

An officer of cavalry believed that the clouds he saw, were an army headed by Napoleon for a descent upon Britain.

The insane often collect stones and bits of broken glass, which they think are diamonds, objects of vertù, or of natural history. They preserve them with the greatest care, and wonder, perhaps, at the ignorance of those who do not perceive their inestimable value.

The light and shade on the walls of the apartment may lead to singular illusions.

M—, labouring under melancholia, was in the habit of constantly striking at the furniture, &c. of the room in which he walked. The faster he walked, the harder he hit. At last M. Esquirol ascertained that the alternations of light and shade, occasioned by his transit through the room, created the illusion that there were rats in it. The faster he walked, the more, of course, the rats were multiplied.

M. Esquirol attended a young lady possessed of a lively imagination, who had devoted much attention to literature and to art. She had become maniacal, and passed her nights without sleep, in raptures at the beauty of the paintings which she saw upon the bed and window-curtains. On taking away the light, the illusion vanished.

M. Esquirol relates two other cases for the purpose of proving that the mere act of vision has much to do with similar illusions.

Reil relates the instance of a lady who had paroxysms of agitation, and even of fury. Her attendant, one day, in the endeavour to calm her, put her hands before her eyes. The patient immediately grew tranquil, and said that she saw nothing. Her physician repeated the experiment with the same result.

M. Esquirol attended a young soldier, allied to the family of Bonaparte. He had gone through many hardships, become maniacal, and was placed under M. Esquirol's care. He saw in all the persons around him members of the Imperial family, and was highly incensed at perceiving the domestics engaged in any servile occupation. He prostrated himself at the feet of one whom he took to be the Emperor, and claimed his pity and protection. M. Esquirol determined to try the effect of bandaging his eyes. The patient instantly grew calm, and could even discourse rationally on the subject of his illusions. M. Esquirol repeated this experiment on several occasions with the same result. On one, the bandage was kept on for twelve hours, during which there was no illusion. As soon as he was allowed to see, the latter re-appeared.

The sense of smell, gives rise to *its* lying brood. The insane often refuse their food, on account of the disagreeable odour in it; and they not unfrequently complain of noxious gases in the air.

Mr. Esquirol has seen lunatics when in a state of great disquiet or of agitation, soothed by the diffusion of agreeable odours in their rooms.

In almost all instances the commencement, and, in some, the course of mental diseases exhibit disturbance of the organs of digestion. These patients may find a bad taste in all the food presented to them. They suspect poison, and reject sustenance with horror or with rage. The suspicions which torment them make them conceive distrust and aversion of their friends or relatives, and greatly distress, of course, the latter. The symptoms ceases after a few days, either under the influence of abstinence, or from the effect of a few evacuations. It need not occasion alarm, for in cause, in character, and gravity, it differs from the obstinate refusal to eat on the part of monomaniacs—a refusal originating in some dominant idea, such as an expiation, or a precept of religion or of honour, or a resolution to die.

The parched state of the mucous membrane of the tongue and mouth, give some lunatics the idea that earth is mingled with their food. In dementia, on the other hand, taste being destroyed, the patients eat with avidity the most filthy and disgusting substances.

When inflammation, or other lesion, has affected the meninges or the structure of the brain, the limbs of the insane sometimes tremble, while the extremities of the fingers loose their natural sensibility. Such patients are clumsy, seize things awkwardly and do not hold them well. They break or let them fall, and judge erroneously of the form, extent, solidity, and weight of bodies.

A lady much debilitated by an accouchement and by sanguineous evacuations, resorted to for the purpose of combating an attack of mania, laboured under obstinate constipation. M. Esquirol prescribed lavements, which the lady insisted on giving to herself. Scarcely had she taken the syringe in her hand, when she threw it down with horror. This happened several times. The lady afterwards assured our author, that the syringe seemed to her so heavy, that she thought it filled with mercury, and was convinced that she was to be turned into a barometer.

M. Esquirol winds up this Essay by the following conclusions:—

1. Illusions are provoked by sensations originating within or without.

2. Illusions are the result of the action of the sentient extremities of the nerves, and of the re-action of the sensorium.

3. Illusions must not be confounded with hallucination, in which the sensorium, alone is at fault.

4. Illusions beguile the judgment on the nature and the cause of impressions actually made, and may drive the insane to acts fraught with danger to himself or to others.

5. Education, habit, profession, sex, modify the character of the Illusion.

6. Illusion take their tone from the dominant passions and ideas of the insane.

7. Reason disperses the illusions which may occur in the man of sane mind, but it cannot dissipate those of the lunatic.

Such is the memoir of M. Esquirol on the subject of Illusions. This and the preceding one, on hallucinations. are worth the attentive perusal of our readers.

PERISCOPE;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

NOTICES OF SOME NEW WORKS.

THOUGHTS AND OBSERVATIONS UPON PAUPERISM, POOR LAWS, EMIGRATION, MEDICAL RELIEF, AND THE PREVENTION OF CRIME. By *William Fergusson*, M.D. F.R.S.E., Inspector General of Army Hospital. 8vo. London, 1839.

THE substance of these Thoughts first appeared in the shape of letters in the Windsor Express. The object of the author is evidently to improve the social condition of the lower classes in this country, and to lend his hand to extricate them from that degraded sink of pauperism into which they had fallen. Dr. Fergusson's opinion of the old poor law and its consequences may be gathered from the following passage :—

"The compulsory rate answered temporarily the *same* purpose in England, but its operation here, as everywhere else, infallibly led to the same ruin; and our beautiful land was but very lately in the speedy course for becoming a vast pauper warren, where the demoralized wretch, in order to share in the plunder, was obliged, in the first instance, to divest himself of every vestige of property—to convert his comely cottage into a hovel—and to assume the habits and habiliments of beggary: for the practice of any of the decencies of life would immediately have subjected him to robbery and constituted him a giver instead of a partaker in the spoil. The rural population was everywhere plunging into this stye: beggary insatiate and insatiable had become almost the sole vocation of the man, and the trade of bastardy, so lucrative and so strenuously advocated by good, but mistaken men—the resource of the woman. Some of the most fertile districts of our country had actually lapsed into this shocking state; rent had ceased to be paid, or the land in consequence to be cultivated with effect; they would have multiplied like the beasts of the field, and like these beasts they would have come in the process of subdivision, and in the scramble for a share, as we see in the present peasantry of Ireland, to have destroyed one another.

And this is the state of things preached up and advocated by the charity-mongers of the present day,—while there exists a most corrupt and venal press which, with persevering malignity, strives to stir up the people in insurrection against this charter of their worldly rescue—to make it a question of political party—to array against it not only all the feelings of the uneducated poor, but to use it as an instrument of party hostility against their rivals, in the struggle for the attainment of political power."

It is impossible for any unprejudiced man, possessed of sound reasoning powers, to peruse the report of the poor law committee, and not to perceive that the old poor law was working the degradation of the lower classes of this country, and the injury, if not the destruction, of all. A bonus was offered on the spread of pauperism and of all the vices that follow in its train. When the man who did not work was as well off as the man who did, and the female who

had lost her virtue and could count her bastards was in a better situation than the virtuous maid, or the wife or widow with her family, it might easily be predicted that laziness would prevail and that prostitution would flourish. Yet this is the state of things which some would affect to consider the beau ideal of moral and political wisdom, and the attempt to remedy it is denounced as the extreme of tyrannous cruelty. As Dr. Ferguson observes—

"Habits of virtue go hand-in-hand with industry, and of these economy and providence are, in a worldy sense, the first. A code of laws, therefore, striking at the very root of the last, made their practice all but impossible. We established, indeed Savings' Banks to receive the deposits of the careful; but the law in substance said—Why should you be so foolish as to make them?—take your gains to the pot-house—waste them in any sensuality you please—the parish is your resource and inheritance—is bound to take your children off your hands, to relieve you from your obligations as parents, and to parents—to guard you in sickness, and support you in old age—you have only to shew, that whatever may have been your occasional gains, you have ever been improvident and reckless, and have resolutely abstained from laying by a single farthing; resort then to her, for she acknowledges no disqualification but a decent garb and habits of virtue! Here let me pause to express my admiration of the intrinsic worth of the English national character, which not even such a system of law could irremediably vitiate or destroy."

We all know the outcry against the Union Bastilles. But this may be said with safety—that if we give the man who will not work the same comforts and the same freedom as are earned by the sweat of the brow, the majority will be found to decline labour and to live on alms. Out-door relief to the able-bodied must generate idleness and all the evils in its train. Men must look upon pauperism as an evil, or they will not struggle to avoid it.

But it is by no means equally clear that out-door relief might not be extended with advantage to the sick and to the aged. The "out-and-out" economists scout, we know, such an idea. According to them the labourer ought to have laid by sufficient money during the vigour of life, to support him in sickness, or when too old for work. But when we reflect on the low rate of wages, particularly to agricultural labourers, and the occasional deficiency of work even for those who are most willing to engage in it, we must pause ere we subscribe to such a doctrine. It seems to us imposisble that the savings of such persons can ever amount to sufficient to keep them in sickness and senectitude.

Much of the antipathy to the New Poor Law has arisen from the assumption of offensively arbitrary power by the Commissioners. The change from the old system to the new was perhaps too sudden and violent. A law which necessarily wears the appearance of harshness, was made in practice harsher. The feelings of Englishmen revolted against the semblance of dictation and oppression, and the final success of the experiment has been endangered.

Dr. Fergusson warmly recommends emigration, in connexion with the improved system of poor laws at home. The friends of the poor are in excessive dudgeon if they (the poor, not their friends) are not permitted to starve or to pauperise in England, and in England only. What is universally done in a small way, they will not permit to be done in a large. If a street has too many bakers the obvious remedy is for some to remove, and to find a neighborhood in which dough is in demand. Every body acts upon this hint. But if a country has too many inhabitants, those who are too poor to transport themselves elsewhere, are not to be transported at the cost of the rest. This is exile, white slavery, and we know not what. Nature has limited the size of our island, but she has not limited the birth of human beings on it. According to these friends of humanity we are to go on procreating and pauperising to the end of the chapter, and to make no attempt to find other provender for the superfluous mouths.

We pass over much of Dr. Fergusson's pamphlet, occupied as it is with general political questions, and proceed to what particularly affects ourselves—the present system of administering medical relief to the poor. A villainous system enough. We cannot help thinking that the hard measure doled out to medical men, has partly been due to their mixing themselves up with the general opposition to the New Poor Law. It is well known that some of the medical journals have displayed a very strong hostility to this measure. The majority of the Legislature, and indeed of all intelligent men in the empire, are so strongly convinced of the necessity for such a law, and so opposed to the clamour against it, that any body of men mixed up in that clamour are certain to be viewed with distrust and aversion. The claims of the medical profession were not likely to be heard with favour, if mingled with a medical anti-poor-law shout.

Dr. Fergusson observes:—

"Centralization—the *vis unita fortior*—I acknowledge to be an excellent principle in government, but it is not applicable to medical attendance upon the poor; when the Poor Law Commissioners therefore united a number of parishes together and then advertised for the lowest tenders, calling up the inexperienced tyro from the schools, in want of a place, to underbid the established practitioner who had long been in charge, they handed over the sick poor to serve the purpose of the former's selfish speculation, or held him up *in terrorem* over the latter, with the view of imposing conditions upon him which he never could execute in fairness either to the unfortunate paupers or himself."

Certainly the system of "tender," is any thing but a tender system for the poor. Would these fat and insolent Commissioners provide medical relief for their own bloated carcases on tender? Would they advertise for the lowest doctor—the cheapest physic? Catch a weasel asleep! But they thought, no doubt, that the worst would do for the poor, and that the parish doctor was a sneaking animal, and would be bullied with impunity. The Commissioners have already found that the medical profession will not tamely submit to be injured and insulted in the same breath.

The great remedy is union, association, and a common principle and mode of action on the part of the profession itself. If it is united, neither commissioners nor ministers, neither the public nor the executive, can trample on it. If broken, jealous, disunited, all will prey on it. We recommend then the formation of associations, their extension, their co-operation. Such associations will present a bold front to assaults from without, and (what is of consequence) will repress treason within. The profession has suffered because its own members have been tempted to betray its interests, in the eager search of their own.

Dr. Fergusson proceeds:—

"The system of tender, in any shape, for personal servcies is a vile one. If acted upon extensively it would destroy any profession, and has been most unwarrantably applied in this case to the general practitioners of England, comprehending a body so numerous that they may be reckoned by thousands; and ever since the passing of the Apothecaries' Act, in the year 1815, have been the best qualified and most valuable that any country ever possessed; search Europe through, there is nothing to be found at all comparable to them. There is not a family in the land that has not been beholden to them for the lives of its members, and to make war upon such men for the sake of a show of economy—for, as I shall presently prove, it can be nothing more, if it be even that—may almost be characterised as national ingratitude. Whoever declaims in this manner ought to be prepared to point out a remedy, and I shall here propose a very simple, and I believe, a perfectly practicable one. Let every pauper on the union list, sick and well, be rated at five shillings per annum, for medical relief; that is, for a small fraction more than a penny a-week, and let this be the pay of the best qualified, and if possible, the nearest practitioner; for the nearest, for obvious reasons, must always be the best. There can be little doubt that he

will acept the contract, for the penalty of having his practice invaded by another would immediately follow. No one residing at a distance should be considered eligible to the trust, for if the poor lie beyond his beat, they will infallibly be neglected, because he will be more lucratively employed nearer home, and no recompense that the union funds could afford to give, would remunerate him for the sacrifice. It is, then, most essential that the sick poor should be within the compass of his daily rounds, for then his knowledge of the pauper's character, and responsibility for his own, will insure his attendance and detect imposture. The proximity (surveillance) of his better patients will constitute them guardians of the poorer, and the expense and trouble to their medical attendant will comparatively be as nothing. This, surely, is what ought to be, but what is it in reality?"

We recommend this pamphlet to the consideration of our provincial brethren.

STAMMERING PRACTICALLY CONSIDERED, WITH THE TREATMENT IN DETAIL. By *T. Bartlett*, Assistant-Surgeon in the King's Own Light Infantry. Duodecimo, pp. 84. Sherwood, Gilbert and Piper.

So many methods have, of late, been promulgated for the cure of the unfortunate habit of stammering, each method by its author stated to be infallible, his statement being backed by a multitude of well-authenticated cases, that it appears incredible that a stammerer should ever be met with. But when we reflect on the annoyance caused to the afflicted individual by this troublesome complaint, and the simplicity of the rules generally laid down for its removal, we cannot wonder that the majority of stammerers on having some plan of speaking pointed out to them, from which they find material benefit, should be willing to believe that they have discovered a remedy for their complaint which will be always efficacious, and that they are permanently cured. And when we consider that stammering is an unnatural action of organs so complicated and so little under the control of the will as those of speech, an action too, become habitual by the practice of years, we shall not be surprised, that, in most cases, no long time elapses before the stammerer, to his annoyance, finds that his old habit is beginning to return, and that at times, do what he will, he cannot speak fluently and without effort to himself. He then begins to doubt the possibility of his cure, he ceases to pay attention to his speaking, and speedily relapses into as bad a state as he was in before. When a healthy individual gives utterance to his thoughts, he has no occasion to think about his organs of speech; the instant the mind has determined on the word to be employed, those organs take on the proper action for producing that word. But with the stammerer, when in those situations in which he has been accustomed to stammer, the case is different; his organs of speech instead of taking on the proper action for forming the words conceived in his mind, will, if not prevented by an effort to volition of the speaker, take on the unnatural action become habitual to them. This volition in the heat of conversation or in a moment of surprise he will often neglect to exert, and from excitement or debility of the nervous system, he will sometimes be unable to exercise. It can only be by perseveringly following for no inconsiderable period, and undismayed by partial relapses, the rules laid down, that the stammerer can entirely overcome this disposition in the organs of speech to take on the unnatural action. And, any one who expects to be permanently cured in a short space of time, will find himself egregiously disappointed.

Mr. Bartlett, in the little treatise before us, after some remarks on the inconveniences of stammering, about which, we suppose, there will be little difference of opinion, and a description of the anatomy of the organs of speech, gives the following account of the method in which the various letters of the alphabet are formed.

"*A** is formed by a strong and grave expression of the breath through the mouth, which is open, whilst the tongue contracts itself to the root. *E* is formed by elevating the tongue nearly to the palate and lips; the tongue is, in the formation of this letter, as close to the palate as possible, without touching it. To form *O*, the lips are protruded in a circular form, the corners of the mouth being contracted, so as to produce the *os rotundum*, a picture of the letter it sounds. In forming *I*, the mouth is opened as if to pronounce *A*; and on the first effort of the voice for that purpose, its progress is checked by a sudden motion of the under jaw towards the upper, and by then instantly cutting off all sound. *U* is formed by protruding the lips a little more than for *O*, forming a smaller aperture with them, and, instead of swelling the voice in the middle of the mouth, bringing it as forward as possible to the lips. *Y* final, either in a word or syllable, is a pure vowel, and has the sound of either *e* or *i*. *W* final is equivalent to *oo*.

The consonants are divided into the continuous, sometimes called semi-vowels, or liquids: the explosive, which are produced by a very sudden, quick expiration; and the sibilant, which are formed as if by a mere aspiration. For the two latter, the breath or voice is stopped in its passage through the mouth; for the former it is allowed a free passage, although the apertures are more narrowed than for the vowels. The semi-vowels are *M*, *N*, *R*, *L*. *M* labio-nasal is formed by a compression of the lips, and letting the voice issue by the nose. *N* is formed by a pressing the tip of the tongue to the gums of the upper teeth, and breathing through the nose with the mouth open. For *R* and *L*, the front of the tongue is elevated so as to touch the palate just above the teeth: for the *r*, the point is drawn back, so as to allow the air to escape; and for the *l*, the point is firmly pressed against the palate, and the breath escapes by the sides: this is the most vocal of all the consonants. Ben Johnson says that *l* melteth in the sounding, and is therefore called a liquid. This however cannot be the reason that *r* is called a liquid, for no two letters can, in this respect, be more opposite. The explosive consonants are *K*, *T*, *P*, *G*, *D*, *B*. *K* is formed by pressing the middle of the tongue to the roof of the mouth, and separating them rather quickly. *T* is formed by applying—when the breath is stopped—the fore part of the tongue forcibly to that part of the palate which is contiguous to the fore teeth. *P* is formed by the sudden opening of the lips, in order to emit the compressed sound of the vowel. *G* is formed like *K*, the tongue and roof of the mouth being separated more gently. By using the guttural sound, when the fore part of the tongue is forcibly appleid to the front of the palate, *D* is produced. The guttural sound is that kind of murmur, as Bishop Wilkins expresses it, which is heard in the throat before the breath is emitted with the vocal sound. *B* is formed like *T*, the guttural sound being added. The sibilant consonants are *H*, *Z*, *S*, *V*, *F*. *H* is the note of aspiration, and formed in various positions, according to the vowel with which it is combined. If the tip of the tongue be turned up towards the upper gum, so as not to touch it, a space is left between the tongue and the palate of the breath to issue, which forms the sibilating sound of *S*: if this operation be accompanied with a guttural sound the letter *Z* will be pronounced. *F* and *V* are formed by pressing the upper teeth upon the under lip, and sounding the vowel *e* before the former and after the latter of these letters. *C* is formed either like *k* or like *s*. The English *J* is a double consonant, compounded of *d* and the French *j*. *Q* has always the sound of *k*; it is constantly followed by *u*, pronounced like *w*. *KS* give the

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* "Vide Richard Payne Knight, Analytical Essay on the Greek Alphabet. 1791.

See also the works of Lowth, Elphinston, Kenrick, Sheridan, Johnson, Walker, Nares, Crombie, and Holder."

sharp and *gz* the flat sound of *X*. When there is a difficulty in pronouncing the lisping consonant *th*, let the person protrude his tongue a little way beyond the teeth, and press it between them as if going to bite the tip of it: while this is doing, if he wishes to pronounce *thin*, let him hiss as if to sound the letter *s*; and after the hiss, let him draw back his tongue within his teeth, and pronounce the preposition *in*, and thus will the word *thin* be perfectly pronounced. It will be proper to make him dwell some time with the tongue beyond the teeth, in order to form a habit and to pronounce daily many words beginning and ending with these letters."

Mr. Bartlett very justly deprecates the employment of any harshness towards a child labouring under this complaint; a little reflection must convince us, that rendering the child timid and nervous on the subject of his speech, is the very way to aggravate the disorder. He also advises that particular attention should be paid to the state of the stomach and bowels. No one who has seen what a remarkable exacerbation of the complaint an attack of indigestion will occasion, can question the propriety of this advice.

Mr. Bartlett then lays down a series of rules to be followed by stammerers. He says in Rule 1—"Before you commence speaking draw a long breath."

This must not be carried too far; few stammerers habitually begin to speak with the lungs exhausted of air; it is in the attempt to articulate that the air escapes. No doubt, when the stammerer finds that his lungs are getting empty, he ought to stop, and then he will naturally refill his lungs with air.

Rule 2, is—"That great attention should be given that the lips, teeth and tongue, perform their different functions when employing the letters requiring the individual use of them."

Rule 3, is—"Lay a decided stress or accent on the last syllable of every word."

This rule we think a very important one, as no one who follows it can speak quickly, and "speak slowly" may be called the golden rule for stammerers.

Rule 7, is—'Be certain of what you are about to say."

This rule requires no comment.

Mr. Bartlett's 12th and last Rule—"Release the mind of all fear and trepidation"—is a very good rule, but unfortunately, impracticable. Give the patient confidence that he can speak without impediment, and he will speak without fear, but until then no mental effort of his can remove his nervous feeling on the subject.

We have now stated the substance of the remedies proposed by Mr. Bartlett for stammering; though not particularly new, they are in accordance with common sense; and though the book might well be compressed into a third of its presents dimensions, we think an adult who labours under this malady, or the parent of a child so afflicted, will not be sorry for purchasing this little work and attentively perusing it.

An Improvement in the Pathology and Treatment of Small-Pox, &c. By *Robert Stephens*, M. R. C. S. 8vo. pp. 24. Renshaw, Dec. 1838.

This little essay was read before the Medical and Chirurgical Society some two years ago, but not published in the Society's Transactions, probably for the reason adduced by the author himself—namely, "that the subject was too abstruse to be caught at a glance." This, however, ought to have been a reason for the publication, in order that the public might have time to read, mark, and inwardly digest the subject of the thesis. We apprehend that the following passage contains the pith of the phamphlet, and the principle of amelioratng small-pox.

"As Dr. Mason Good observes, the severity of the precursory symptoms and

of the eventual disease, hold a pretty accurate balance. Now the precursory symptoms are febrile and excited action, in order to render the superficial tissues fit for the development of the eruption. Can no reason be given why this febrile and excited action should be greater in one individual than another. Surely temperament and excitability, either temporary or otherwise, should not be put out of the question. This is the sole cause, though it may sometimes appear otherwise to a superficial observer. That there is a specific and *unaccountable* aptitude, is an unsupported opinion, and an idle attempt at rule and definition which is so baneful a principle to the science of medicine. This notion at once closes the path of enquiry, whilst by adopting the opinion that excitability and temperament are the causes of occasional malignancy, it must be remembered that science and ingenuity can control excitability, and consequently the diseases it aggravates. This is a most valuable pathological basis

It is to be remarked, that the most delicate persons are often the most susceptible, and liable to violent inflammatory excitement.

When small-pox proves fatal, the immediate cause is, that typhoid symptoms and exhaustion of the nervous or functional power have supervened upon undue excitement, and where the fever has run very high, the patient being delicate and excitable, with little nervous or vital power, this has taken place even in consequence of the precursory fever, before the eruption is complete. In this case we usually have typhus with purple spots,* which might always be prevented by controlling the excitement in the first instance by using decided measures. More frequently when small-pox proves fatal it is at the latter part of the disease, exhaustion supervening upon the excessive inflammation which attends the suppuration of a full eruption, just as in the case of an extensive burn or scald. The vital power is during these states of inflammatory excitement used up, or burnt out too quickly as it were. Its undue expenditure at first constitutes the severity of the precursory symptoms which is always followed by a full eruption; and, withal, the patient is left the less capable of standing against the excessive inflammation which is sure to accompany the ripening of a full eruption. Therefore the grand opportunity is at the commencement of the disease, when by controlling the excitability, not only the nervous power will be kept in reserve, but a light form of small-pox will ensue."

The tartrate of antimony is the favourite remedy of the author, and preferred to venesection.

"By keeping down the cutaneous circulation, the appearance of the eruption is delayed for a time—but all this is completely in the control of the medical attendant, if he have any ingenuity; and by giving calomel, or the blue pill with the tartrate of antimony, I have much reason to think this delay is beneficial, because it promotes the decomposition of the virus which is already in the system."

Some cases are appended to illustrate the utility of keeping the cutaneous circulation in check during the eruptive fever.

THE PHILOSOPHY OF DISEASE, &c. By JAMES BOWER HARRISON, M. R. C. S. Small 8vo. pp. 152. Simpkin and Marshall, 1838.

We have now three philosophies—one of health, one of life, and one of disease. We only want one more—the philosophy of the last act of the drama. And we need this fourth philosophy much more than either of the other three. When the curtain of life is about to drop, and the last lingering look to be taken

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* "From relaxation of the exhalents and tenuity of the circulating fluids."

of the cheerful day and all we hold dear on this wondrous globe—it requires even more than philosophy to enable frail man to contemplate with composure the approaching gloom of eternal night!

The little essay before us appears to have small connexion with philosophy of any kind. It presents a light sketch of almost every disease to which mankind is liable—but especially of inflammation—and is addressed to the general reader. It is manifest that these sketches are too slight to satisfy the medical practitioner or student—and we doubt very much whether they are calculated for non-professional perusal. Light as are the portraits, they will be found too heavy in technicalities for general readers, who are more taken up with Nicholas Nickleby, or Oliver Twist, than with the philosophy of that which they cordially hate, as conjuring up recollections and associations of the most triste and nauseating kind—mal-odorous pills and bitter draughts—the tenacious leech and the burning blister. The hypochondriac, who is the principal purchaser of popular works on medicine, will here be distracted by such a multiplicity of maladies, that he will hardly be able to pick out the one that suits his case—so little detailed are the symptoms, and so evanescent are the features of each particular form of disease. It is true that Mr. Harrison has run a kind of glossary through his pages, exhibiting the Greek and Latin derivations of the principal terms; but to the learned reader these are unnecessary, and to the unlearned they are—"Greek and Latin"—that is to say, they are unintelligible. However, if Dr. Harrison can enlighten the popular mind, and can teach it to appreciate the blessings and the abilities of practitioners, we have not the slightest objection. We wish him every success.

VITAL STATISTICS OF GLASGOW. By *Robert Cowan*, M.D. one of the Physicians of the Glasgow Royal Infirmary. 8vo. stitched, pp. 54, 1838.

This is a valuable pamphlet, and reflects great credit on the zeal as well as the ability of Dr. Cowan. The pamphlet is occupied with:—

I. Statistics of Fever and Small-pox prior to 1837.
II. Statistics of Fever for 1837.
III. Remarks suggested by the Mortality Bills.

It would be "laterem lavare" to analyse a pamphlet of this description. Consisting of numerical tables, and of deductions from them, condensation is impossible. We shall content ourselves with selecting some of the more prominent points, and endeavour to put our readers in possession of what is most calculated to interest or to instruct them.

It appears that, in 1791, the population of Glasgow was 66,578—in 1831, 202,426, an enormous increase. That increase has arisen in a very great degree from immigration, and from the increased demand for female domestic servants, and for female labour in the numerous cotton and power-loom factories and bleachfields in the neighbourhood of the city; a large proportion of the immigrants have been females. Those who resort for employment to towns are generally from the age of fifteen to twenty-five, a fact of some importance in reference to fever.

In 1819, there was one Irish person out of every 9 67-100 of the inhabitants; and in 1831, one out of every 5 69-100. From this increase of Irish alone, without including the influx of labourers from the Highlands and Lowlands of Scotland, it is quite obvious that the relative proportion of the middle and wealthier classes to the labouring class must have been yearly diminishing; and, hence, one source of the increasing rate of mortality in Glasgow.

The present accomodation in the Glasgow hospital amounts to 450 beds. Temporary hospitals have been required and provided on several occasions.

The following facts shew in a striking manner the increase and the alarming prevalence of fever in Glasgow. On dividing the period between the years 1795 and 1836 into septenniads, it appears that, in the first septenniad, the fever patients treated in the Infirmary were—

	12.92	per cent	of the whole.
In the second,	9.84	—	—
In the third	8.17	—	—
In the fourth,	31.77	—	—
In the fifth,	36.19	—	—
In the sixth,	49.96	—	—

and if to this table, strictly applicable to the Royal Infirmary, we add the numbers treated in the temporary hospitals, we will raise the per centage in the fourth period.

From 31.77 to 47.62; and in the sixth period,
From 49.96 to 54 83

During the first 35 years embraced in the Table the number of patients affected with fever treated in the Infirmary amounts to 11,511, while in the last seven years it amounts to 11,751.

It is on comparing Glasgow with some other great towns that the amount of its fever cases becomes most conspicuous. Take Manchester. This town, with a population at the last census, of 227,808, and which, in its constitution and density must nearly resemble that of Glasgow, has been for years, and is now comparatively free from fever. The average annual number treated in the Manchester Fever Hospital for seven years ending in 1836, was 497
The annual average in Glasgow during the same period 1843
The number treated in Manchester Hospital in 1836, ... 780
The — — Glasgow — — 3125

Fever is now diminishing in Manchester, while it is increasing in Glasgow.

The prevalence of fever in Glasgow, when compared with Manchester, is still more strikingly contrasted by the great change which has taken place in this respect. From 1797 to 1806, both inclusive, the number of the fever patients treated in the Glasgow Infirmary was only 883, while those treated in the Manchester Fever Hospital amounted to 4618.

"We have proved," says Dr. Cowan, "that since 1816, but more particularly during the last seven years, fever has been steadily increasing in the City of Glasgow, and that its victims constitute within a fraction of 55 out of every 100 patients treated in our hospitals, independently of those treated by the district surgeons within the Burgh.

This increase, especially during the last seven years, has taken place, not in years of famine or distress, but during a period of unexampled prosperity—a period when the wages of labour have been ample—the prices of provisions comparatively low, and every individual, able and willing to work, secure of steady and remunerating employment."

He adds:—

"Many of the causes of the production and propagation of fever must be ascribed to the habits of our population; to the total want of cleanliness among the lower orders of the community; to the absence of ventilation in the more densely-peopled districts; and to the accumulation, for weeks or months together, of filth of every description in our public and private dunghills; to the over-crowded state of the lodging-houses resorted to by the lowest classes; and to many other circumstances unnecessary to mention."

Dr. Cowan dwells on the almost obvious fact that, amongst the poor, the longer the duration of a malady, the more heavily it presses on them and on the community which must support them. We cannot therefore but agree with him in the conclusion, that the prevalence of fever in Glasgow presents obstacles to the promotion of social improvement among the lower classes, and is productive of an amount of human misery, credible to those only who have witnessed it.

II. The statistics of the Glasgow Fever Hospital from the 31st of October, 1835, to the 1st of November 1836, next occupy the attention of our author.

The Glasgow Fever Hospital can accommodate, without being over-crowded, two hundred and twenty patients.

From the 31st of October, 1835, till the 1st of November, 1836, there were admitted into the wards of the Fever Hospital, 2655 persons.

In the first six months they were 909, in the last 1746.

The number of patients admitted into the Fever Hospital in 1835, only amounted to 1359, and, on an average of the last eight years, to 1477; while in 1836 the number was 3125, being greater than that treated in 1832, in the Infirmary (1589) and Mile-End Hospitals (1145), 2734.

Some little time ago, a paper was published in the Dublin Journal by Dr. Lombard of Geneva, in which he endeavoured to make it appear that the prevalence of fever in Glasgow is mainly owing to the Irish. We gave an abstract of that paper in this Journal. Dr. Cowan observes in regard to it:—

"The proportion of Irish treated in the Fever Hospital is much less than what is generally believed by those who have not paid attention to the subject. Dr. Lombard of Geneva, estimates the number of Irish resident in Glawgow at 60,000, and ascribes the prevalence, and what he deems the peculiarities of our Fever, to the number of Irish resident in Glasgow The author of the article "Vital Statistics," in M'Culloch's Statistics of the British Empire, vol. ii. p. 572, makes the following remarks:—'The increasing mortality in Glasgow is no doubt in part due to the accession of Irish population, who amounted, in 1831, to more than 1-6th of the inhabitants. The poor Irish, we strongly suspect, are keeping up, if they be not introducing, the Fevers of their wretched country in the heart of the British cities. This is confirmed in the case of Glasgow, by the ages at which the mortality is augmented, and by a report of the Glasgow Infirmary before us, from which it appears that, in the year 1835, out of 3260 patients treated, 1258 had Fevers and of these 125 died.'

This statement will be proved to be incorrect while adverting, at the close of this essay, to the influence which Fever has had in augmenting the mortality of Glasgow, especially during 1835, the year alluded to in the quotation."

The population of Glasgow and its suburbs in 1831, was ranked in the Government census at 93,724 males—108,702 females—in all, 202,-426.

Dr. Cowan subjoins several Tables. From an examination of them, it appears that the period of life at which Fever is most liable to occur, is from the age of 20 to 25 years for the males, when the proportion is 21.23 per cent. and from the age of 15 to 20 for females, when the proportion is 23.83 per cent.

The number of females at every age prior to 25 exceeds that of the males.

The number of females admitted under 20 years of age is 571

Males	480
Excess of females under 20	91 or

8.64 per cent.

This fact must be kept in view, as it has an important bearing on the relative mortality of the sexes.

The number of both sexes admitted from the age of 20 to that of 30 years, is 1216, or 53.87 per cent.

The number admitted under the age of 30 years, is 1766 or 78.24 per cent.

The admissions rapidly diminish after the age of 40. Of 2257 individuals affected with fever, 2075 were under 40 years of age and only 182 above it.

Dr. Cowan presents us next with Tables of the mortality in the Hospital. The *rate* of mortality is calculated with the exclusion of those dying within 24 hours after admission, these latter being seldom seen by him. This must be borne in mind. We pass over the Tables and quote the summary of results.

The first point that attracts our attention is the relative mortality of the two

sexes, and certainly it is very remarkable. The total mortality of the males is 1 in every 6 121-163, while of the females it is only 1 in every 11 21-101.

In the males the mortality is 14.83 per cent.

In the females .. .. .. 8.92 ..

The deaths of the males within the first 24 hours amount to 17.

The deaths of the females .. .. 9.

At almost every period of life embraced in the Table the mortality of the males from Fever exceeds that of the females.

At the age of 15 the mortality is very nearly the same in both sexes.

At the age of 30 the mortality of the males is more than double that of the females.

The rate of mortality is greatest in females at the age of 45.

The mortality of the males under 20 years of age, 6.04 per cent.

.. .. females .. .. 4.90 ..

The total mortality under 30 years of age, 8.35 per cent.

.. .. above 30 .. .. .. 24.84 ..

From the Table of Mortality without reference to sex, and which is a combination of the first two Tables, it appears that, after the age of 10, the mortality from fever slowly increases till the age of 35. From the mortality being 2.63 per cent. at 10 years of age, it has gradually risen to 14.92 at 35: at 40 it is 22.36, and at 50, 39.06.

III. The next point which engages the attention is the presence or absence of eruption in fever cases.

"Fever may occur without the presence of any eruption during the whole of its progress, or it may be attended by eruptions of various kinds, both when prevailing sporadically and epidemically. The eruptions most commonly attending the fever of this country are petechiæ and vibices—appearing towards the last stage, and symtomatic of a putrid state of the system—an exanthematous eruption, denominated by French writers 'eruption typhoide,' and sudamina, with others of less frequent occurrence. These eruptions may occur singly or in combination.

In many of the epidemic fevers which have taken place, the occurrence of any eruption has not been so general as to form a characteristic feature of the disease, while in others it has been so frequent as to entitle the epidemic to be ranked as an exanthematous, or eruptive fever.

In the epidemic fever of 1816-17 and 18, the fever in the Glasgow Hospital was distinguished, in the worst cases, and in the more advanced stages, by petechiæ and vibices, and was not attended by any exanthematous eruption. In the existing epidemic fever, an exanthematous eruption is present in a vast majority of the patients admitted.

This eruption generally makes its appearance from the fourth to the ninth day of the disease, occasionally, according to my own observations, and those of Chomel, appearing at a later period."

Dr. Cowan proceeds to tabulate methodically the cases of eruption. We need not follow him. He concludes that he is warranted in the inference that the exanthematous eruption is not an essential character of the fever of this country as during the first six months it occurred in only 49 per cent. of the females, and 63 per cent. of the males; and, besides this, even in an epidemic, in which it is a distinguishing feature, it is not invariably present, as during the last six months it was absent in nearly 1-5th of those admitted.

Dr. Cowan is of opinion that fever is contagious.

"All the gentlemen who have acted as Clerks in the Fever Hospital for many years past have been attacked with fever, unless they had it previously to their election. During last year twenty-seven of the nurses of the establishment were seized with fever, and five of them died. Several of the students have been affected. One gentleman, who acted as apothecary, died in the House; and if

I have escaped, it must be attributed either to being past the period of life, at which fever usually takes place, or to my being secured by having had two dangerous attacks at an earlier period of my career, when acting as physician's clerk in the Infirmary during the epidemic of 1816-17 and 18."

So far we have traced fever in Glasgow up to the termination of 1836, a period, not of distress, but of unexampled prosperity. From the close of 1836, one of those periodical depressions in trade, arising from the state of our monetary system, has deprived a large portion of the population of the means of subsistence. The pressure of distress has been aggravated by the "strikes" among the workmen. By the strike of the Cotton Spinners on the 8th April, 1837, nearly 8000 individuals, chiefly females for whom no provision whatever existed, were thrown out of employment. To crown all the average prices of grain were much higher during 1837 than they had been for some time previously.

Much was done by the inhabitants to mitigate these evils; funds were liberally supplied by public contribution, employment was procured for 3,072 males during the months of May, June, and July; soup kitchens were established, from which about 18,500 individuals were daily supplied with food; but, notwithstanding all these exertions, famine and pestilence prevailed to a fearful extent, and the rate of mortality (exclusive of the still-born) rose to 1 in 24.63 of the population. Fever increased as might easily have been anticipated. It extended its ravages over 1-11th of the inhabitants, but its victims were almost exclusively the labouring classes.

The number of fever patients treated in hospital in 1837, was	5387
.. .. in 1836, ..	3125
Being an increase in 1837 of	2262
The number of fever patients treated by the District Surgeons, in their own houses, in 1837, was	2320
.. .. in 1836	716
Being an increase of	1604

The hospitals were so crowded that many applicants were necessarily rejected. The preceding numbers, therefore, are imperfect.

A reference to the mortality bills will express more forcibly the comparative frequency and mortality of fever during the last three years, than any statement deduced from the hospital returns.

TABLE of the Deaths from Fever recorded in the years 1835, 1836, and 1837.

1835	412	being	1	to every	15-571	of the whole deaths, and	1	to every	570.388	of the population.				
1836	841	..	..		10.036	.. ..			290.130	.. ..				
1837	2180	..	..		5.711	.. ..			116.055	.. ..				

"The rate of mortality from fever during 1837 has been calculated as high as 1 in 10 of those affected; and upon this supposition 21,800 individuals have been attacked with the disease. The usual average mortality from fever treated in hospitals, is 1 in 15: but the intensity of the epidemic, arising from the poverty and destitution of the population, carried the rate of mortality higher than ever before known in Glasgow.

Upon the assumption that the rate of mortality from fever was 1 in 15 of those attacked in 1835, 1 in 12 in 1836, and 1 in 10 in 1837, which calculations will be found nearly correct, the number of individuals who have been affected with fever in Glasgow during the last three years will be as follows:—

In 1835	6,180
1836	10,092
1837	21,800
	38,072

The mind cannot contemplate without horror the amount of human misery which the above statement so forcibly expresses."

After presenting a Table of Monthly Deaths from Fever, Dr. Cowan remarks:

"Many interesting observations may be drawn from this Table. It shows the slow progress of an epidemic disease when trade is prosperous, compared with what occurs in seasons of distress. Up to November 1836, the period at which the commercial embarrassments were felt, the mortality from fever had not been rapidly increasing. In November it was just about double what it had been in January preceding, the number of deaths being 45 in January, and 89 in November.

The moment, however, the effects of the stagnation in trade extended to the working classes, the mortality increased with fearful rapidity, aided no doubt by the season of the year, the high price of grain, and the scarcity or high price of fuel. The death from fever in the four months preceding 1st December, 1836, were 316; for the four months following, 696.

The Table also marks the period at which the epidemic reached its maximum amount of mortality, viz. in the second quarter of 1837, and in the month of May in that quarter, being the month succeeding that in which the strike of the cotton spinners took place, by which 8000 individuals were thrown out of employment."

The labouring classes should not lightly hazard a "strike." The consequences, both physical and moral, are formidable to themselves and their families. Famine, disease, and vice are in its train.

The mortality of males was greater than that of females at every period of life.

The last portion of the Pamphlet before us is occupied with—Remarks suggested by the Mortality Bills.

The Mortality Bill of 1837 exhibits a rate of mortality inferring an intensity of misery and suffering unequalled in Britian, and not surpassed in any city that we are acquainted with on the continent of Europe. The rate of mortality in 1832, during the prevalence of cholera, was 1 in 21.67; but owing to the shorter duration of cholera, less misery and pauperism was produced by it than by fever.

Dr. Cowan thinks he has proved that, during the prevalence of poverty and epidemic disease, the number of marriages and births are uniformly diminished, while, at the same time, the deaths are increased. We find that in Glasgow—

The marriages in 1836 were	2375
— — 1837, ...	2095
Being a decrease of	275
The baptisms in 1836 were	3325
— — 1837, ...	3085
Being a decrease of	243

The above numbers show the decrease in the *registered* marriages and baptisms, only, and not in the total marriages and births, the number of which cannot be obtained. As less than one-half of the births are registered, and as 86 fewer still-born were interred in 1837, the diminution in the number of births may be assumed as about 572.

From further tables furnished by our author, he concludes that, during the last three years, the rate of mortality has been increasing; they likewise demonstrate that the deaths at different periods of life have been fluctuating, and also, that, during 1837, the increased mortality has arisen among the adult and not among the infantile population,—a point of much importance, as the mortality of the adult and productive portion of the community occasions much more misery, suffering and pauperism, than an equal or even much greater mortality does at an earlier period of life.

It is in this particular that the increased rate of mortality in 1837 stands prominent above all former years, with the exception of 1832, when the city suffered from the ravages of cholera. In 1832 the per centage of burials under 10 years of age was 42.23, and in 1837, 45.17 in both years, being less than in any year since registers were kept.

The other epidemics, besides fever, which have contributed to swell the lists of mortality during the last three years, have been small-pox, measles, scarlet fever, hooping-cough, and catarrh or influenza; the four first diseases affecting chiefly the infantile portion of the community.

Dr. Cowan sums up thus:—

"It has been proved by the preceding Tables and remarks, that the increase of mortality in Glasgow, during 1835-36-37, has been occasioned by the prevalence of scarlet fever, measles, small-pox, hooping-cough, fever, and influenza, aided in their operation during 1837, by want and destitution among a large body of the population.

The first four diseases were most fatal in 1835-36, and confined their ravages to children under five years of age. Fever prevailed during the whole three years, but its ravages were but slightly felt till 1836 and 1837. In 1835 the deaths from fever, as already stated, were to the total deaths as 1 to 15.57, in 1837, 1 in 4.71. The influenza prevailed chiefly in January, 1837, and to its effects on the extremes of life, and on those labouring under chronic disease, must be attributed a large share of the mortality of the year."

We are happy to learn, that fever is not now desolating Glasgow as our readers will perceive it has done. But as pestilence, by carrying off the weak, breeds healthy seasons to come, these in their turn are nurturing the seeds of future pestilence. Our enormous and increasing manufacturing population is a source of anxiety in more ways than one. It behoves the supreme and the municipal authorities to use all possible efforts to ameliorate the condition, and improve both the physique and the morale of the labouring classes.

ELEMENTS OF PHYSIOLOGY. By *J. Müller*, M.D. &c. Translated from the German, with Notes, by *William Baly*, M.D. Graduate of the University of Berlin. Illustrated with Steel Plates, and numerous Wood Engravings. Part IV. containing Ciliary Motion, Muscular and Allied Motion, Voice and Speech. Price 4s.

We are glad to perceive that this valuable translation is proceeding to its termination. The publication of Müller's physiology is calculated to be of essential service in this country. Our systematic treatises have been hitherto quite unworthy of the state of science, and although we have had individual observations and researches on particular points which displayed a high order of merit, we have had no work which was comparable to the present.

We have before observed that Müller's physiology holds a middle place between the reveries of transcendentalism and the vague superficiality of the dilettante school. Take Burdach's physiology upon the one hand or Mayo's on the other, and we have specimens of both extremes. In the one, many subjects of great importance are barely glanced at or perhaps not mentioned—in the other, every thing, great and small, important and insignificant, is smothered beneath interminable disquisition. There are pages, we might almost say chapters, in Burdach, of such insufferable twaddle, as one could hardly suppose a sane man would indite.

We have intended and we still intend to present some articles to our readers, for the purpose of exhibiting the actual state of physiology. A practical Jour-

nal should not neglect, nor should practical men, its readers, undervalue the advances which are made in our knowledge of the functions. A genuine practical man is no blind empiric, no dogged routinist—he is one who is able to *apply* science to the business of life, and to useful purposes. To apply science he should be well acquainted with it. Too many men call and consider themselves practical, simply because they have acquired and employ some empirical experience, not regulated nor directed by high nor comprehensive views.

The Part before us is an extremely instructive one. We have not space at present to redeem our promise, nor to offer a sketch of any topic of importance. We feel inclined to pick out the opinions of Müller on the cure of stammering and his brief hints for its management.

"The method proposed by Dr. Arnott for the cure of stammering, whatever be the result of its practice, is, at all events, founded on a sound physiological view of the nature of the affection. 'Had the edges of the glottis,' says Dr. Arnott, 'been visible, like the external lips of the mouth, the nature of stuttering would not so long have remained a mystery.' The glottis is repeatedly closed in persons who stammer, and the cure of the affection must therefore be effected by conquering this morbid tendency to closure by voluntarily keeping it open as much as possible. For this purpose Dr. Arnott advises that the patient should connect all his words by an intonation of the voice continued between the different words, as is done by persons who speak with hesitation. This plan may afford some benefit, but cannot do everything; since the main impediment occurs in the middle of words themselves, and depends on the abnormal association of the movement of the larynx with certain movements of articulation. Were I called upon to advise a method of treatment in a case of stammering, I would recommend, in addition to Dr. Arnott's plan, the following procedure. I would let the patient practise himself in reading sentences in which all letters which cannot be pronounced with a vocal sound, namely the explosive consonants *b*, *d*, *g*, *p*, *t*, and *k*, were omitted, and only those consonants included which are susceptible of an accompanying intonation of the voice; and I would direct that all these letters should be pronounced with such a sound of the voice and that their sound should be very much prolonged. By this means a mode of pronunciation would be attained in which the articulation would be constantly combined with vocalisation, and the glottis consequently never closed. When the stammerer had long practised himself in keeping the glottis open without intermission, even between the words by Dr. Arnott's method, and in maintaining the glottis open during and after the pronunciation of every consonant capable of vocalisation and of the vowels, he might proceed to the mute and continous consonant *h*, and the explosive sounds *g*, *d*, *b*, *k*, *t*, *p*. In such a plan of treatment the patient himself would perceive the principle; while the ordinary method—that of Mad. Leigh—is mere groping in the dark, neither teacher nor pupil knowing the principle of the procedures.

There is a kind of defect of speech essentially different from stammering, consisting in a protracted intonation of the voice between words, or the introduction of a more or less prolonged *a* or *au*,—nasal vowel sounds, or peculiar vocal sounds modified by a jingling character between the words, which themselves are correctly pronounced; for example. I . . . a . . . have. It is like the prolonged vibration of a musical instrument beyond the required duration. These sounds form and facilitate the transition from one word to another, and they may frequently be produced as a means of transition; although they, in many instances, also arise from hesitation and want of readiness of the ideas. This mode of speaking sometimes attends stammering, probably because the impediment to the commencement of the next word is avoided by this transition of sounds."

We again recommend the work to the profession and more especially to pupils. To our own we have freely introduced it.

ILLUSTRATIONS OF CUTANEOUS DISEASE. A SERIES OF DELINEATIONS OF THE AFFECTIONS OF THE SKIN IN THEIR MORE INTERESTING AND FREQUENT FORMS; WITH A PRACTICAL SUMMARY OF THEIR SYMPTOMS, DIAGNOSIS, AND TREATMENT, INCLUDING APPROPRIATE FORMULÆ. By *Robert Willis*, Licentiate of the Royal College of Physicians, Physician to the Royal Infirmary for Children, Author of an English Version of Rayer on the Diseases of the skin, &c. The Drawings after Nature, and Lithographed by Arch. Henning. Fasciculi I. II. III. for January, February, and March.

Dr. Willis is already known, highly favourably, to our readers, as the Translator of the work of M. Rayer on Diseases of the Skin, and as the author of a Treatise on Diseases of the Urinary Organs.

His object in publishing the present Illustrations may be best stated in his own words. These express such just views and explain so clearly what should be the object of all who endeavour to familarize the profession with the appearances and the management of cutaneous complaints, that we cannot forbear quoting them.

"These diseases are so numerous and so varied in their appearance, and have been designated by such a multiplicity of names, that it is only since our distinguished countryman Dr. Willan thought of attaching Figures to his descriptions that a knowledge of their forms can be said to have been made attainable, or a determinate nomenclature of their genera and species rendered possible. Had the great man I have named but lived to complete his task, it is likely that little would have been left for others to accomplish. His Work, 'On Cutaneous Diseases,' was worthy to have served as a model in every part, for those who came after him; and had it done so, a knowledge of the affections of the skin would now have been less rare than it still undoubtedly remains. But he died in the middle of his career, and the labour of carrying out his plans devolved upon others, who, in my humble apprehension, seem not to have duly appreciated the end he had in view. This, as I conceive it, was to render an account of the nature, symptoms, and diagnostic marks of the disease generally of which his Figure was the individual expression, and to apply the knowledge thus acquired to its legitimate end, the alleviation or cure of the malady. Dr. Willan gave Plates, mostly embracing single subjects, which he illustrated with a text at once the most elegant, the most learned, and the most practical that can be imagined

The serious expense of a work on the plan of that of Willan, occasioned principally by the great cost of copper-plate engraving, was, however, an insurmountable obstacle to its general diffusion, and therefore to its usefulness. Other branches of natural knowledge have the titled and the wealthy for their patrons and cultivators; our honourable profession is not adopted either by the rich or the great; the objects it pursues are not held of general interest, and he who publishes expensive plates on subjects of medical science, has generally had to bear the cost of them himself. This circumstance led to the adoption of a procedure which, in regard to the Diseases of the Skin, I cannot but view as fraught with something like a necessity of failure in the end to be obtained. This was the plan of giving miniature representations of Cutaneous Diseases, upon square patches of integument, and setting a multitude of these microscopic pictures within the frame of a single page. By this device the eye is so much distracted, that what is sought for is almost certain to elude its search.

Since I translated the excellent work of Dr. Rayer, which was begun in the year 1833, I have paid much attention to the subject of dermal pathology; and in the art of Printing from Stone, I have seen a means of realizing the objects which I imagine ought to be kept in view in every Iconographic work—the

union of pictorial representation with practical knowledge at a moderate expense. For some considerable time I have, therefore, engaged an artist to make drawings for me of those forms of cutaneous disease that struck me as most interesting, which occured either in the course of my own practice, (especially at the Royal Infirmary for Children, where the opportunities of observing the diseases of the skin in childhood are all but unlimited,) or that were kindly recommended to my notice by those among my friends who knew the interest I took in the subject. Determined to avoid everything like crowding my plates, I have resolved rather to content myself with giving delineations of eighty or ninety subjects that shall never afterwards be confounded with one another, nor with anything else, than to produce three or four hundred, among which uncertainity and confusion must of necessity have remained. At the same time I see that three or four hundred figures are many more than are required to convey a very perfect knowledge of the subject. The number of varieties is, indeed endless—that of species, to which varieties are easily referable, is much more limited. On from eighty to one hundred plates, embracing the same number of subjects, I conceive that I can exhibit almost every disease that commonly occurs or that is really important.

Nor could I, with my views, be satisfied to give a barren account, two or three lines in length, of the individual instance I have represented. This were but playing the showman to the painter. I have confronted each plate with an account, in as brief terms as possible, of every particular of greatest importance in the Symptoms, Diagnosis, Prognosis, and Treatment of the disease figured: by which I trust that my work, when finished, will be found not only a Connected Series of Representations of the Diseases of the Skin, but a Compendious Practical Guide to a Knowledge of their intimate Nature, and of the Means of Treating them succesfully.

The first Fasciculus presents Delineations of Lepra Pryracea (too lilac-like in colour)—of Hepres Zoster—of Intertrigo cum Vesiculis (not bad)—and of Lupus non Exedens. The artist has throughout thrown too much of a purplish hue upon his subjects.

In the second Fasciculus we have Lepra Vulgaris (still the lilac predominates) —Pompholyx—Purpura in the shapes of Ecchymoses and Petechæ.

The third Fasciculus presents us with representations of Trichosis (Porrigo) Scutulata—of Ezema Capillitii—of Ecthyma Capillitii—and of Pityriasis Capitis.

If we might hint a fault, it is in the colouring. That is not yet we think, perfect. No doubt it may and it will be improved. The execution of the work is in all other respects excellent. It is likely to answer the intentions of the author, and is eminently adapted to diffuse a knowledge of the various forms of cutaneous affections. To the country practioner it will prove of great service and we cordially recommended all our readers to patronize it, both for the sake of the author and themselves.

ILLUSTRATIONS OF OSTEOLOGY. By *Theodore G Boisragon*, M. D. Cheltenham.

The elder Dr. Boisragon is well known as a very excellent and eminent physician of Cheltenham. The son will, we trust, tread in the father's steps. The present is an earnest of his zeal and industry. The Illustrations before us are beautifully executed, judiciously selected, and well adapted to convey, in the absence of the bones themselves, an accurate notion of their points of demonstration.

THE SURGEON'S VADE MECUM, A HANDBOOK OF THE PRINCIPLES AND PRACTICE OF SURGERY. Illustrated with numerous Wood Engravings. By *Robert Druitt*, M.R.C.S. London, Renshaw, 1839.

If we know anything of the wants and tastes of students, this Vade Mecum will *take*. It gives them what they need, concise descriptions and pat directions. Nor are the omissions considerable. Such a book was a desideratum, and, if we are not mistaken, Mr. Druitt has made a *hit*.

NATURAL HISTORY.

I. A HISTORY OF BRITISH BIRDS. By *William Yarrel*, F.L.S. V.P.Z.S. Illustrated by a Woodcut of each Species and Numerous Vignettes. Van Voorst. Part XI., completing the First Volume.

This agreeable work issues regularly from the press. It is one which should be on the drawing room, as well as on the library table—an interesting present to the young, a pleasant companion for the old. The present Fasciculus keeps the promise made by its predecessors.

II. A HISTORY OF BRITISH REPTILES. By *Thomas Bell*, F.R.S. F.L.S. Professor of Zoology in King's College. Illustrated by a Woodcut of each Species, with some of the Varieties, and numerous Vignettes.

It is not necessary to introduce Mr. Bell or his works, to our readers. He is excellently qualified for an undertaking of the kind before us, and a very deserving one it is. We extract the following account of the method of using the poison apparatus in serpents.

"When the animal inflicts the wound, the pressure on the tooth forces a small drop of the poison through the tube; it passes through the external orifice, which is situated on the concave side of the curved tooth, and is in the form of a slit. The manner in which the blow is inflicted is as follows. The animal generally throws itself in the first place into a coil more or less close, and the anterior part of the body is raised. The neck is bent somewhat abruptly backwards, and the head fixed almost horizontally. In an instant the head is, as it were, launched by a sudden effort towards the object of its anger, and the erected tooth struck into it, and withdrawn with the velocity of thought. It is found by experiment that the effect of subsequent wounds is greatly diminished either by the diminution of the quantity of venom, or by some deterioration of its strength; so that if a venomous Serpent be made repeatedly to inflict wounds, without allowing sufficiently long intervals for it to recover its powers, each successive bite becomes less and less effective. A gentleman of my acquaintance had some years since received a living Rattlesnake from America. Intending to try the effects of its bite upon some rats, he introduced one of these animals into the cage with the Serpent; it immediately struck the rat, which died in two minutes. Another rat was then placed in the cage; it ran to the part of the cage farthest from the Serpent, uttering cries of distress. The snake did not immediately attack it; but after about half an hour, and on being irritated, it struck the rat, which did not exhibit any symptoms of being poisoned for several minutes, and died at twenty minutes after the bite. A third, and remarkably large rat, was then introduced into the cage. It exhibited no signs of terror at

its dangerous companion, which, on its part, appeared to take no notice of the rat. After watching for the rest of the evening, my friend retired, leaving the serpent and the rat together; and on rising early the next morning to ascertain the fate of his two heterogeneous prisoners, he found the Snake dead, and the muscular part of its back eaten by the rat. I do not remember at what time of the year this circumstance took place, but I believe it was not during very hot weather."

We cordially recommend this work also to our readers. We shall take care to place it in our own library.

III. THE NATURALIST'S LIBRARY. Conducted by Sir *William Jardine*, Bart. F.R.S.E. F.L.S., &c. Mammalia, vol. VIII. Amphibious Carnivora, including the Walrus and Seals, also of the Herbivorous Cetacea, &c. By *Robert Hamilton*, Esq., M.D., F.R.S.E. M.W.S., &c. S. Highly. London, 1839.

We take shame to ourselves for not having directed the attention of our readers who love natural history (and who do not) to the Naturalist's Library. It is a very delightful work, and should grace the shelves of any man who has a family. Productions of this kind will, we hope, displace the trash which was formerly in the hands and on the lips of young persons, and give them that relish for the study of nature, so invigorating to the mind, and so calculated to fit it for the sober occupations of life.

In the advertisement to the present volume we observe it stated, that:—

"Amongst the various benefits which the volumes of the Naturalist's Library have conferred upon the study of Natural Science, not the least valuable has been the publication of groupes, or families, of animated beings, of the extent of which we know that the public in general had no previous conception.

Such is our present volume on the history of the Amphibious Carnivora, in which are described all the known species, illustrated by numerous plates and wood-cuts, and these interesting details congregrated together at the very trifling expense of *six shillings*."

Independently of wood-cuts this volume contains thirty well-executed coloured plates, and not the least amusing are three of the "Great Sea Serpent." and the "Craken." We cordially recommend the work to our readers, and we shall not fail to notice future volumes as they appear.

IV. A GENERAL OUTLINE OF THE ANIMAL KINGDOM. By *T. Rymer Jones*. F.Z.S. Professor of Comparative Anatomy in King's College, London, Parts III., IV. and V. Price 2s. 6d. each.

We noticed in our last the commencement of this useful work. We have now to chronicle its continuation.

The second Part almost completed the First Division of the Animal Kingdom —the ACRITA, comprising:—

1. Sponges.
2. Polyps.
3. Polygastric animalcules.
4. Acalephæ.
5. Parenchymatous Entozoa, or Sterelmintha.

With the Third Part we come upon the Second Division, the NEMATONEURA, comprising:

1. Bryozoa, or Polyps with Ciliated Arms.
2. Rotifera.
3. Epizoa.
4. Cavitary Entozoa, or Cœlelmintha.
5. Echinodermata.

We present the following brief sketch of the division of NEMATONEURA, the second step in the RADIATA of Cuvier. It is contained in the First Part of the Outlines before us.

"The nervous matter is distinctly aggregated into filaments, and in some cases nuclei of neurine, which may be regarded as rudimentary nervous centres, have been noticed. It is to be lamented, however, that in this most interesting group of animals, in which we have the first development of most of the organs subservient to the vital functions, the extreme minuteness of some genera, and the difficulty of distinctly observing the nervous system in the larger species, has prevented our knowledge regarding their organization, in this particular, from being of that satisfactory character which it is to be hoped it will hereafter attain to.

Owing to the want or imperfect condition of the nervous centres, the nematoneura are necessarily incapable of possessing external organs of the higher senses, the general sense of touch being as yet the only one of which they are indubitably possessed; yet in their muscular system they are much more efficiently provided than the acrite orders, as the development of nervous threads of communication renders an association of muscular actions possible; and therefore, co-apparent with nervous filaments, we distinguish in the structure of the nematoneura distinct fasciculi of muscular fibre, and powers of locomotion of a much more perfect description.

The digestive apparatus is no longer composed of canals merely excavated in the parenchyma of the body, but is provided with distinct muscular and membranous walls, and loosely attached in an abdominal cavity.

The circulation of the nutritious fluid is likewise carried on in a separate system of vessels, distinct from the alimentary apparatus, yet still unprovided with a heart, or exhibiting pulsations for the forcible impulsion of the contained blood.

The fissiparous mode of reproduction is no longer witnessed, an obvious consequence of the increased complexity of structure, and these animals are for the most part androginous, or capable of producing fertile ova, without the co-operation of two individuals."

The accounts of the Cœlelmintha, the Bryozoa, the Rotifera, the Epizoa, and the Echinodermata, are concise, clear, and interesting. The woodcuts illustrate the text, and both are executed in the most creditable manner.

In Part IV. we are introduced to the HOMOGANGLIATA, the Articulata of Cuvier, the third grand division of the Family of Nature.

It includes, writes Mr. Jones, an immense number of living beings adapted by their conformation to exist under a far greater variety of circumstances than any which we have hitherto had an opportunity of examining. The feeble gelatinous bodies of the ACRITA are obviously only adapted to an aquatic life, and accordingly they are invariably found either to inhabit the waters around us, or to be immersed in the juices of living animals upon which they subsist. The NEMATONEURA, likewise, are all of them too imperfect in their construction to admit of their enjoying a terrestial existence, for, possessing no nervous centres adequate to give force and precision to their movements, they are utterly inca-

pable of possessing external limbs endowed with sufficient power and activity to be efficient agents in ensuring progression upon land; neither are any of them furnished with those organs of sense which would be indispensable for the security of creatures exposed to those innumerable accidents to which the inhabitants of a rarer element are perpetually obnoxious; the NEMATONEURA therefore are, from their organization, necessarily confined to a watery medium.

But the type of structure met with in the HOMOGANGLIATA admits of far higher attributes, and allows the enjoyment of a more extended sphere of existence: senses become developed proportionate to the increased perfection of the animal; limbs are provided endowed with strength and energy commensurate with the development of the nervous ganglia which direct and control their movements; and instincts are manifested in relation with the increased capabilities and more exalted powers of the various classes as they gradually rise above each other in the scale of animal development.

The most obvious, though not the most constant, character which distinguishes the creatures we are now about to describe, is met with in their external conformation; they are all of them composed of a succession of rings formed by the skin or outward integument, which from its hardness constitutes a kind of external skeleton, supporting the body; and giving insertion to the muscles provided for the movements of the animal. In the class CIRRHOPODA alone is this external characteristic wanting, and the Homogangliate organization masked by a tegumentary testaceous coat of mail, which they seem to have borrowed from the molluscous type.

This division includes.—1. Cirripeda. 2. Annelida. 3. Myriapoda. 4. Insecta. 5. Arachnida. 6. Crustacea.

The properties and habitudes of the Annelida, Myriapoda, and Insecta occupy Parts IV. and V., and of the mode in which they are treated we can speak as favourably as we have of the preceding Parts. Altogether the work of Mr. Jones is a highly meritorious one, and should be in the possession of every medical man who wishes to keep pace with the current knowledge in the department of Zoology.

ELEMENTS OF CHEMISTRY, INCLUDING THE RECENT DISCOVERIES AND DOCTRINES OF THE SCIENCE. By the late *Edward Turner*, M.D. Sixth Edition, enlarged and revised. By *Justus Liebig*, Ph.D. Professor of Chemistry in the University of Giessen; and *Wilton G. Turner*, Ph.D. ORGANIC CHEMISTRY by Professor Liebig. Part III. No. 1. Price 3s. 6d. London. Taylor and Walton. 1839.

We have watched with interest the appearance of the successive Parts of this Edition of the late Dr. Turner's Chemistry. We have recommended and we recommend it as the most valuable work of the kind in our language. The present Part, devoted to Organic Chemistry, opens up quite a new field in that region of chemical science. It would be impossible to present an intelligible sketch of it in any moderate compass, and we must therefore content ourselves with recommending the original to the profession in the very strongest terms.

THE QUARANTINE LAWS. MR. HOLROYD'S LETTER TO SIR J. C. HOBHOUSE ON THE ABUSES AND INCONSISTENCIES OF THE SAID LAWS. 1839.

We suspect that the fate of the quarantine laws will not be very unlike that of the corn-laws. Neither of them may be entirely abrogated, nor immediately; but both of them are destined to considerable modification. The mass of absurdities, inconsistencies, and diableries exposed in this letter, would fill a whole article, and we cannot condense it. The following extract from a letter of Dr. Gregson to Mr. Holroyd will give the reader some idea how the plague doctors manage these things in the *East*.

"On arriving at Beyrout I was put in Quarantine: during this time the Lazzaret and town were alarmed by the Doctor of the Commission reporting a Greek sailor from Cyprus attacked by plague; luckily the Commission consisted of the Governor, who was a well educated Turk, a paid Inspector, and the Doctor. This case caused a sensation, as the trade with Cyprus is great. The Governor called in another doctor, who said it was not plague. During this perplexity the Governor, hearing I was in the Lazzaret (he had known me well in Egypt), sent for me to have my opinion; I found the patient suffering from an extensive gangrene with sloughing, caused by a severe contusion, produced by a blow from the cable breaking when they were heaving it up. Astonished at the ignorance, or rather malicious conduct of the Doctor, (he had an interest, in being paid so much for visiting people from infected parts) I gave my opinion in reprobation of the Doctor's conduct; he was immediately discharged. Had he belonged to the Alexandrian Commission, it would have screened him and persecuted those who differed from him. Our Consul Mr. Thurburn is an honourable exception; he did not belong to it, and has interfered to prevent British subjects from being dragged to the Lazzaret. In Alexandria I have been sent by order to inspect various cases in the Lazzaret. The Commission Doctors got on these occasions two Doctors to side with them; for these services one is now Commissioner Doctor at Alexandria, the other so at Damietta, viz. Couloutchi and Reggio."

Yes, Yes! we shall never want the plague of quarantines, while we have such purveying doctors as the above, who can convert the blow of a cable into a brace of buboes! The tenor of the various answers to various questions collected by Mr. Holroyd is all to corroborate the opinion that the plague is an endemic frequently spread out or elevated into an epidemic, and that it is caused by a febrific miasm, but occasionally propagated by emanations from the bodies of infected persons, as is the case with all, or almost all fevers.

THE MEDICAL PORTRAIT GALLERY.

Twelve parts of this amusing and instructive work have now been published. They contain memoirs, more or less complete, of many of the eminent men of our profession. If the work is patronised, as it ought to be, it will be really, what its name implies, a gallery of portraits of whatever has been most learned, and famous amongst us.

Such a gallery is wanted. Success is more the test of merit, of one description or another, than the unsuccessful are willing to allow. In our profession, great success has seldom been attained without corresponding exertions or without the possession of some distinctive quality of mind. Success too, with us, almost certainly indicates no wide departure from moral rectitude. A history of medical success becomes a lesson for the future candidate. He reads, in the golden page, the bright results of industry, genius, and worth, and while he reads, the glowing sentiment of admiration insensibly blazes into the desire to emulate.

There is a sacred pleasure too in contemplating the images of men who have dignified the sciences we profess, who, in fact, have made it the science that it is. While we gaze we resuscitate buried generations—study physic from the votive tablets in the temples of the Greek—pace the cloistered walks of Oxford with Linacre—enjoy the hospitality and the learning of Mead—or roar at the jest of honest Abernethy.

We cannot of course give a formal account of each distinguished person whose portrait and memoir grace the Gallery of our excellent friend, Mr. Pettigrew. But we think that a few anecdotes, some collectanea, from his pages may not be unacceptable.

1. *The Death of Vesalius.*—The following account, which has been much distorted by tradition, is contained in a letter from Hubert Languet to Gaspar Peucer.

"Vesalius (he says,) believing a young Spanish nobleman, whom he had attended, to be dead, obtained leave of his parents to open him, for the sake of inquiring into the real cause of his illness, which he had not rightly comprehended. This was granted; but he had no sooner made an incision into the body, than he perceived the symptoms of life, for, opening the breast, he saw the heart beat. The parents, coming afterwards to the knowledge of this, were not satisfied with prosecuting him for murder, but accused him of impiety to the inquisition, in hopes that he would be punished with greater rigour by the judges of that tribunal, than by those of the common law. But the king of Spain interposed, and saved him; on condition, however, that, by way of atoning for the crime, he should undertake a pilgrimage to the Holy Land."

Boerhave and Albinus say that he was condemned by the Inquisition, from which he was, by the influence of Philip, saved. He made the pilgrimage with James Malatesta, general of the Venetian army, whom he accompanied to Cyprus, whence he passed to Jerusalem. There is much in the account given to excite, unbelief as to its credibility, from the extent to which dissection must necessarily be made before the heart could be exposed; yet the possibility of the muscular fibres of this organ acting by their principle of irritability, a principle unknown in the time of Vesalius, remaining even after vitality had quitted the body, may tend to sanction the statement made.

In 1563, the principal chair at Padua became vacant by the death of his pupil, Fallopius, and Vesalius was, at the invitation of the senate of Venice, induced to return to succeed this celebrated physician. On his voyage, however, a a storm arose—he was shipwrecked—thrown upon the Island of Zante, and there perished of hunger, on October 15, 1564. His body was recognised by a goldsmith of Venice, who procured an honourable entombment for it, in the church of St. Mary, of that island, and he placed the following inscription over his grave:—

ANDREÆ VESALII BRUXELLENSIS TUMULUS.
QUI OBIIT IDIBUS OCTOBRIS,
ANNO MDLXIV.
ÆTATIS VERO SUÆ QUINQUAGESIMO,
QUUM HIEROSOLYMIS REDIISSET."

2. *Abernethiana.*—A man of rank consulted Mr. Abernethy, and was received by him with remarkable rudeness. Upon some severe remark being made, the patient lost his temper and told Mr. A. he would make him *eat his words*. "It will be of no use," said Mr. A., coolly, "for they will be sure to come up again!"

"Pray Mr. Abernethy, what is a cure for gout?" was the question of an indolent and luxurious citizen. "Live upon sixpence a day—and earn it," was the cogent reply.

He is reported to have been consulted by the late Duke of York; and he stood before his royal highness, whistling, with his hands in his breeches-pockets, as usual. The duke, astonished at this conduct, said, "I suppose you know who I am." "Suppose I do," said he, "what of that?" And his advice to his royal highness was given thus: "Cut off the *supplies*, as the Duke of Wellington did in his campaigns, and the enemy will leave the citadel."

A barrister had a small ulcer on the leg which was difficult to heal, and he determined to apply to Mr. Abernethy. Aware of his impatience and eccentricity, he immediately upon entering his room began to pull down his stocking. "Holloa! holloa! what the devil are you at?" said the surgeon. "I don't want to see your leg; that will do—put it up, put it up." The patient did so; but justly dissatisfied with the imperfect manner in which his case had been considered, he, instead of the usual fee, placed a shilling only upon the table. "What is this?" said Mr. A. "Oh," replied the barrister, "that will do—put it up, put it up," and coolly walked away.

Abernethy as a Lecturer—The lecture-room was the grand theatre upon which Mr. Abernethy displayed; there, indeed, he "shone ecentric like a comet's blaze!" and there he would indulge his disposition and propensities to an extent which occasioned the pupils frequently to regard it as an exhibition, and call it an "Abernthy at Home". His mode of entering the lecture-room was often irresistibly droll—his hands buried deep in his breeches-pockets, his body bent slouchingly forward, blowing or whistling, his eyes twinkling beneath their arches, and his lower jaw thrown considerably beneath, the upper. Then he would cast himself into a chair, swing one of his legs over an arm of it, and commence his lecture in the most *outré* manner. The abuptness, however, never failed to command silence, and rivet attention.

"'The Count was wounded in the arm—the bullet had sunk deep into the flesh—it was, however, extracted—and he is now in a fair way of recovery.' That will do very well for a novel, but it won't do for us Gentlemen: for 'Sir Ralph Abercromby received a ball in the thick part of his thigh, and it buried itself deep, deep: and it got among important parts, and it couldn't be felt; but the surgeons, nothing daunted, groped, and groped, and groped,———and Sir Ralph died.'"

Abernethy at the last.—His eccentricity continued during his existence, and towards the last he is reported to have joked upon the œdematous state of his legs produced by the disturbance of the circulation and his difficulty of breathing. Some one inquired of him how he was? to which he replied, "Why, I am better on my legs than ever: you see how much stouter they are?" His hobby retained full possession also to the end of his life. He attributed his disease to the stomach. He said, "it is all stomach; we use our stomach ill when we are young, and it uses us ill when we are old." But it is not a little singular, that he expressly enjoined that no examinations of his body should take place!

3. In Part VII. is an interesting memoir of William Hunter. Perhaps our readers may not be aware that the Doctor proposed to Government building a National Anatomical Museum, a proposition which was virtually rejected.

Dr. Hunter's solicitation was to have the grant of a piece of ground, upon which he might expend six or seven thousand pounds in erecting a building first for the purpose of anatomical study, and a "*Plan for establishing a museum in London for the improvement of anatomy, surgery, and physic*," was forwarded with the "memorial." Lord Bute recommended the plan to the Right Hon. George Greenville, and Mr. Hawkins presented a memorial to the king. Delay after delay, however ensued, and the proposal fell to the ground. The Earl of

Shelburn felt the utility of the scheme, and proposed that it should be effected by a subscription, and put his own name down for 1000 guineas. Dr. H. rejected this from motives of delicacy, and commenced building a theatre, museum, &c. on a spot of ground in Great Windmill-street, which has ever since borne the name of the Hunterian School.

Dr. Hunter's Death Bed.—His composure and resignation at the last deserve to be recorded. Turning to his friend Dr. Combe: "If I had strength enough to hold a pen, (said he,) I would write how easy and pleasant a thing it is to die."

"O, what a wonder seems the fear of death,
Seeing how gladly we all sink to sleep;
Babes, children, youths, and men,
Night following night, for threescore years and ten."

COLERIDGE.

His Embalming of Mrs. Van Butchell.—His freedom of speech, and ease in treating his subject, once occasioned him some little trouble. It was customary to deliver, at the conclusion of each course of lectures, a discourse on the mode of making anatomical preparations. This introduced the embalmings of the ancient Egyptians, and Dr. H. alluded to the process of preserving a body from putrefaction as a matter of little or no difficulty, and one that might most easily be accomplished. Among his pupils at this time was a man afterwards much celebrated in London by his singularity of manners and empiricism, the late Martin Van Butchell. Upon the conclusion of the lecture he approached the Doctor, stated the interest he had felt upon the subject of embalming, and was anxious that the Doctor should effect this for him upon the body of his wife, who was at that time lying in the last stage of a consumption. The Doctor had spoken of the matter as being so trifling, that he could not refuse this request, and, upon the death of Mrs. Van Butchell, the operation was effected.

4. *Baillie's Generosity.*—The following instances of the generosity of Dr. Baillie deserve to be recorded. Sir C. Bell has related the first.

"The merest chance (says he) brought me acquainted with a circumstance very honourable to Dr. Baillie. While still a young man, and not affluent, his uncle William, dying left him the small family estate of Long-Calder-wood. We all know of the unhappy misunderstanding that existed between Dr. Hunter and his brother John. Dr. B. felt that he owed this bequest to the partiality of his uncle, and made it over to John Hunter. The latter long refused; but, in the end, the family estate remained the property of the brother, and not of the nephew of Dr. Hunter."

Mr. Wardrop relates several instances of generosity on the part of Baillie.

"A young lady who was suffering severely from a pulmonary complaint, asked his advice, and he recommended her to spend the winter months in a milder part of the country. He found that her circumstances would not admit of her trying this last resource to regain her health, and, to enable her to do so, he instantly gave her an adequate sum of money."

"A lady, whose rank in life was far above her pecuniary resources, had an illness, when his attendance became important, and during which he regularly took his usual fee, until it was no longer necessary; he then left in a bag the whole amount of what he had received, offering to the lady, as an apology; that he knew that, had he once refused to take his fee during his attendance, she would not have permitted him to continue it."

5. *Advantages of Royalty in Death-bed Scenes.*—The following extract from the life of Mr. Wardrop, as compiled by Mr. Pettigrew in a late number of his

biography of the living and the dead, will excite some reflections in the minds of our readers, but whether of the joyous or dolorous kind, we shall leave themselves to determine.

"There are circumstances connected with the last illness of George IV. which deserve notice here, as forming part of Mr. W's professional history. About eight weeks previous to the King's death, Mr. Wardrop visited his majesty at Windsor, the King then being considered in a state of convalescence from a severe inflammatory attack of the chest. From the state of the respiratory and circulating organs, Mr. W. was convinced that the condition of the heart was much altered; and on returning to London, he instantly repaired to Sir Henry Halford, purposely to direct his attention to this important circumstance, and to urge him to visit his Majesty on the following day, which was several days sooner than had been appointed. His Majesty continued to be attended by the late Mr. O'Reilly, on whose practical talents the King had great confidence, as well as by Sir H. Halford; and Mr. Wardrop's visit at Windsor was not repeated until he was called upon by the 'lord in waiting,' commanding him immediately to repair to Windsor. This visit was made on Sunday the 25th of April, 1830. On this occasion, when Mr. W. entered the royal bed-chamber, he found his Majesty alone, sitting upon a couch, his countenance bespeaking some serious mischief. He had great embarrassment in breathing; and, after detailing every circumstance of his case, and Mr. W. had made a most careful examination of the chest, his majesty said, in a firm and decided tone, 'Tell me, my good friend, what you think, really and truly, is the matter with me, for I am confident that there is something much more serious than ——— either thinks or chooses to tell me.' Mr. W. then stated to His Majesty that the difficulty of breathing arose entirely from an impediment of the circulation of the blood through the heart. His Majesty replied, in a manly tone, 'tell me, Wardrop, honestly, if you think I shall recover.' To which Mr. W. answered, that his condition was by no means hopeless, though His Majesty must be perfectly aware that any disease of a vital organ, like the heart, could not be altogether free of danger.

After having remained in the royal bedchamber about forty minutes, Sir William Knighton entered, and Mr. W. retired. The King having stated to Sir William Knighton the opinion which Mr. W. had given of his case, and Mr. W. having repeated that opinion to Sir W. K. at his own particular desire, Sir William then requested Mr. W. to state in writing that opinion, and the treatment he proposed to adopt, in a letter addressed to Sir Henry Halford, and which he would deliver to Sir Henry on his arrival at Windsor in the evening. In this letter, Mr. W. intimates his opinion that the affection of the heart might be dependent on an *arthritic diathesis*, and that, if by pediluvia and the application of stimulants to the legs and feet, the gout could be brought to manifest itself in the limbs, His Majesty might be relieved. He also suggested, that leeches should be applied to the region of the heart.

The *post-mortem* examination of the King demonstrated the morbid condition of the heart, and afforded a most satisfactory proof of the correctness of the opinion Mr. W. had formed during the King's illness, and the propriety of the treatment he had proposed. But after the period of this visit, Mr. W's attendance at Windsor terminated, though he afterwards learnt that the King had repeatedly expressed a wish to see him, and also surprise at his never having returned to the palace. Such however, was the helpless condition of the monarch on his death-bed, that he was entirely under the control of a few individuals who surrounded his person."

We shall resume on a future occasion our extracts from this interesting work. We trust sincerely that it will be patronised.

A Letter to Dr. Chambers on several important Points relating to the Nature and Treatment of Gout. By Sir *Charles Scudamore*, M.D. pp. 59. Longman and Co.

The days of "flannel and patience" in the cure of gout, have long gone by—nor is the disease so cherished as it was at the beginning of the present century, when Dr. Heberden remarked that—

"People are neither ashamed nor afraid of it; but are rather ambitious of supposing that every complaint arises from a gouty cause, and support themselves with the hope that they shall one day have the gout, and use a variety of means for this purpose, which, happily for them, are generally ineffectual." Again—"For this (the gout) seems to be the favorite disease of the present age in England; wished for by those who have it not, and boasted of by those who fancy they have it; though very sincerely lamented by most who in reality suffer its tyranny."

At present, the dread of *having* the disease is nearly as great as that of *curing* it formerly was. The passive treatment suddenly changed into a very active one, and Dr. Kinglake sent some scores of patients across the river Styx, by way of securing for himself a warmer reception than that which he accorded to gout. Then came the eau medicinale—so magical in its workings that it was considered a boon from the skies. But the blessing was quickly found to be a curse—as is the case with many supposed blessings in this world! The colchicum autumnale succeeded, and though less magical in its effects, has been more safe and beneficial in its operation. It is now, and probably will remain so, the best remedy in the paroxysm of gout—though it cannot be considered at all in the light of a prophylactic. This last and most important measure must be sought in the avoidance of the causes, and correction of *their* effects on the liver, stomach, and intestines.

It is well known that Sir Charles early introduced, and has long clung to a formula of his own—the acetum colchici combined with magnesia and sulphate of magnesia, thus acting both on the kidneys and the bowels. He now uses the acetous extract of colchicum prepared by Mr. Garden, by the evaporation of a saturated infusion of the dried roots in acetic acid, over a warm bath. The formula in the new Pharmacopœia is not exactly according to the directions of Sir Charles. Colchicum, Sir Charles thinks, is still grossly abused in practice, and productive of serious consequences. He employs the remedy only as "a palliative agent for the control of an inconvenient degree of the gouty suffering and irritation—and that in the mildest form of its preparation, and in combination with other remedies." The real curative plan consists in the correction of various functional disorders. In chronic cases he also endeavours to alter the state of the blood itself.

Sir Charles's note-book has furnished him with ample data, he thinks, to estimate the nature of gout. In the first place, he observes, the fit may occur as the effect of repletion, proving a kind of safety-valve in the removal of plethora. Where gout is complicated with, or dependent on other diseases, he thinks the colchicum should rarely be used, as the explosion of gout itself may be useful in arresting the other malady—as for instance apoplexy or tendency to it.

"The brain is sometimes very curiously affected by gouty irritation, not yet developed in its proper form. A gentleman, who had never experienced gout but once. had undergone great fatigue of body, with anxiety of mind. He was seized with inflammation of the calf of the leg, which was considered to be erysipelas; and at the same time his imagination became affected with this extraordinary delusion, that he thought himself a serpent crawling at the bottom of a cauldron. A blister was applied to the neck, and active medicines were ad-

ministered; on the following day, acute gout attacked the ball of the great toe, and immediately the senses were restored.

Headaches in early life are sometimes removed by gout in maturity. Every body has seen asthma and gout alternate. Neuralgic affections of the scalp are often relieved by a paroxysm of gout in the feet. Cramps and fidgets are frequently of a gouty nature, and brought to a conclusion by a paroxysm. Gastralgia, palpitation of the heart, giddiness, &c. are not uncommon marks, under which gout harasses its victims for years, and which are relieved, at least for a time, by a regular attack on less vital parts.

"The mind, not less than the body, is brought under the powerful influence of suppressed gout. A gentleman, threatened with gout when beginning a tour in Italy, took colchicum in repeated small doses, and averted the fit; but was rendered so listless and lethargic, 'so truly miserable,' to use his own words, that at the Florentine gallery he could scarcely resist throwing himself down on the floor, instead of admiring the works of art by which he was surrounded. His first wish then was to have the fit which he had been so studious to prevent.

A military man, of the firmest mind when in health, had in the same manner made use of colchicum, and suppressed a coming fit. His nervousness became extreme. He would only see a chosen friend, and on the slightest occasion burst into involuntary tears, without any moral cause.

Nerves are sometimes, in a fit, the only texture apparently affected: the most intensely painful attack which I ever saw, was in the nervous branches distributed over the foot. With the exception of a little fulness of the veins, there was no external appearance of disease. The case was very peculiar; the gentleman was of full habit; no relief was afforded by colchicum, or by opiates, until he had been very freely bled from the arm."

Several pages of this letter are occupied by examples of the vagaries which gout plays on the system; but most of them are familiar to practitioners of any experience.

In respect to the treatment, Sir Charles thinks that the functions of the liver are almost invariably disordered—"often standing in the relation of cause and effect." This, we must confess, is both too broad and too narrow a basis for the pathology of gout. So strong is often the hereditary diathesis, that, in spite of all due attention to the functions of the liver and the whole of the digestive organs, yet gout will occur. Nevertheless we admit that, in a great majority of cases, "it is of primary importance to give some mercurial purgatives and alteratives, for the purpose of evacuating *vitiated secretions*, and inducing more healthy action." But we would ask Sir Charles, or any other practitioner whether this precaution is not necessary in almost every complaint, where there is any suspicion of disordered action or vitiated secretion? Sir Charles cautions us against salivation, in such cases,—a caution hardly necessary. He prescribes the acetous preparation of colchicum as a valuable palliative—sometimes in a state of effervescence—with Battley's liq. op. sed. as a sedative—sometimes the acetate of morphia, joined with a sudorific.

After the violence of the attack is over, Sir Charles recommends, and we think wisely, *local* remedies—seldom leeches.

"In the advanced stages of the disease, other topical means may be used with great advantage; as the veratria liniment; linim. sapon. c. with liquor, ammon. acet. and tincture of opium; linim. sapon. c. with linim. camphor. c. and tinctura lyttæ, &c. Finally, benefit will be derived from the daily or occasional sponging with a mixture of tepid salt water and vinegar; friction and shampooing; with bandage also, if the vessels should be so weak as to cause œdema."

From some little acquaintance with gout, both *personally* or professionally, we hesitate not in giving it as our opinion, none of the above applications is superior or even equal to simple spirituous evaporating lotions, kept constantly on the inflamed parts, and applied in a tepid state. Sir Charles appears to be a

little striken with the "*soda phobia*" of Magendie and his disciples. We are no advocates for the habitual use or abuse of soda, where acidities do not prevail in the stomach; but where they do prevail, we maintain that alkalies are highly beneficial, and extremely soothing. We shall conclude with the following judicious advice.

"Although no truism is more known, it cannot be to often repeated, that almost all persons who have the means, take daily an excess of food beyond what is required and useful.

Every one has too much occasion to say with the poet.

——— video meliora proboque,
Deteriora sequor.

In some instances of dyspepsia, the digestive powers are so weakened, that the conversion of vegetable matter into good chyme is difficult or impracticable, and acetous fermentation is the consequence; but otherwise, for the gouty individual, I must approve of a mixed diet, of animal and vegetable food. Various facts serve to show that, in gout, the blood is overcharged with animal principles. All the secretions are loaded. It should be the patient's study not to exceed that quantity of food with which he can, by the exercise of self-control, just feel himself comfortable. Due regard is, at the same time, to be paid to the nervous energy; and this is a point always to be studied in the diet. It will often be expedient to make gradual rather than sudden changes."

Having thus concentrated all the chief points of this Letter, we shall merely observe that, although we differ from a writer and practitioner, of ample experience, on some minor points, yet we part with him entertaining a high opinion of his abilities in the treatment of that painful complaint which has occupied so much of his attention and observation.

ANATOMIE COMPAREE DU SYSTEME NERVEUX CONSIDERE DANS SES RAPPORTS AVEC L'INTELLIGENCE, comprenant la description de l'encéphale et de la moelle rachidienne, des recherches sur le développement, le volume, le poids, la structure de ces organes chez l'homme et les animaux vertébrés; l'histoire du système ganglionaire des animaux articulés et des mollusques, et l'exposé de la relation qui existe entre la perfection progressive de ces centres nerveux et l'état des facultés instinctives, intellectuelles et morales. Par *Fr. Leuret*, Medecin de l'Hospice de Bicetre. Ouvrage accompagné d'un atlas de 33 planches in-folio, dessinées par M. Chazal et gravées sous sa direction. Ire Livraison—Tome Premier. Paris, chez J. B. Bailliere, 1839.

ATLAS—Première Livraison—Planches 1 à 8—Texte, Feuilles 1 à 4. J. B. Bailliere.

We look on this as a very valuable work. At present we shall content ourselves with merely pointing out the contents of the volume before us. At a future opportunity we shall present some account of our author's views.

He treats in succession of the nervous system of the mollusca—of the articulata—of fish—of the cerebro-spinal nervous system of reptiles.

The plates which are uncoloured, but remarkably clearly executed, represent 1, the Nervous System of the Invertebrata—2, the Cerebro-Spinal Nervous System of Fish, Reptiles, and Birds—the Encephalon of the Mammifera whose Cerebral Lobes are deficient in Convolutions—4, the Encephalon of the Fox tribe—5, the Encephalon of the Cat tribe—,6, the Encephalon of the Bear and Sable tribe—7, the Encephalon of the Sheep tribe, comprising the Ruminantia and Solipeda.

We recommend this work strongly to our anatomical readers.

SPIRIT OF THE BRITISH AND AMERICAN PERIODICALS.

VIRTUES OF THE IODIDE OF POTASSIUM.

MR. Laycock, in a communication to our contemporary, the Medical Gazette, sets forth in strong colours the use, if not the utility of the iodide of potassium.

The quantity of iodide of potassium consumed in the hospital for the last three years, is as follows:—In 1836, 12½ oz. in 1837, 63½ oz.; in 1838, 75 oz.

It would seem that Mr. Russell the junior surgeon prescribes sarsaparilla and *not* iodide of potassium, *because* he is unable to understand the rationale of the latter—while Mr. Champney prescribes the iodide in similar cases, because, we presume, he is unable to understand the rationale of the former. This reminds us very much of the two sects in Babylon, one of which made it a cardinal point to enter the temple with the right foot foremost, while the other denounced damnation on all who did not advance the left foot.

Mr. Laycock relates four cases. We shall only quote the fourth.

Case 4.—"This is another 'sarsaparilla' case. Mary Brown, thin, bloodless, and with nasal voice, has ulcers in the throat, and nocturnal pains. She has taken mercury for a syphilitic disease. She was admitted an out-patient on August 20th, 1838, and took first the simple decoction of zarsa: then Hudson's syrup, with lime-water; and lastly, the decoction, with half an ounce of the extract to each pint. She got no better, and was made an in-patient on Nov. 1st. For two or three weeks she took five grains of the iodide of potassium in a wine-glassfull of the decoction of zarsa, and in two or three days there was a manifest improvement; the appetite returned, the nights were good, and the ulcers in the throat looked clean. She was convalescent on December 22d, when she was made an out-patient, and in a few days was discharged cured. She has had no relapse up to the present date."

Upon this and on the preceding cases, Mr. Laycock makes some observations, which perhaps, require notice. He says:—

"The iodide of potassium is a specific in such cases as 1 and 2, if it be genuine, and given regularly and in sufficient doses. The shortest time in which I have seen an ulcerated throat healed is 18 days. In cases in which there is sallowness, emaciation, syphilitic ulcers, and where mercury has previously been given, I have never seen it fail. When the osseous tissues are affected, the health is as rapidly restored; but, of course, the dead or careous bone requires the usual time for exfoliation.

In venereal eruptions it has not been found quite so successful as in the preceding cases, but required its action to be quickened by small-doses of blue-pill or calomel.

The iodide has been very freely administered in other forms of disease. In cutaneous eruptions it has been signally successful. A youth, aged 19, the son of a country shoemaker, came into the hospital with a chronic impetiginous eruption of sixteen years' standing. Every kind of medicine usually prescribed had been tried without success, in addition to a course of the Harrogate waters. He was admitted under the care of Mr. Champney, on Feb. 16, 1837, and was dismissed cured April 16. He took three grains only of the iodide, three times a day, for the first month, and his cure was proportionally slow. He took blue-pill and extract of colocynth occasionally, and used an ointment composed of half a drachm of the chloride of mercury, and an ounce of the dilute ointment of the nitrate of mercury.

Given in ptyalism it seemed to have the effect of increasing the discharge; but it has never excited the salivary glands when given alone. Dr. Simpson has prescribed it with considerable success in hypertrophy and other diseases of

the heart, which constitute a large proportion of our cases. It has also been given with success in rheumatic, neuralgic, and paralytic affections. It has been tried with varying success in visceral enlargements, and almost every form of chronic organic disease."

He adds:—

"The superiority of iodide of potassium to zarsa, in the treatment of secondary syphilis, is now placed beyond all doubt by so much concurrent testimony; and it would be a worthy object of enquiry to determine how far it may be made to supersede the latter expensive medicine in common cases in which it is now freely used, as in diseased joints and scrofulous abscesses. The period of stay of venereal cases in hospital is shortened, on an average, at least two-thirds, when treated with the iodide."

We would suggest to Mr. Laycock, that a little less confidence in his own opinions, and a little more respect for the opinions of others, would not be unbecoming. Mr. L. dogmatises pretty boldly, and yet some exception may be taken to his statements.

We do not hesitate to say that he exaggerates the powers of the iodide of potassium. It is very far from a specific in such cases as the one that we have quoted. No doubt it is a valuable medicine, no doubt it often relieves, sometimes cures almost magically, but no doubt it not unfrequently fails. We have at this moment several cases of this kind under our care which have been only temporarily, or not at all benefitted by the iodide.

Mr. Laycock says that it is not *quite* so successful in the *venereal* eruptions! What are those eruptions? In the majority of the cases of genuine venereal eruption we venture to affirm that the iodide is not successful *at all.*

In another place Mr. Laycock remarks that the superiority of the iodide over sarsaparilla in the treatment of secondary syphilis is placed beyond all doubt. The truth is, that neither one nor the other goes far towards curing secondary *syphilis.* That, after all, requires mercury. Sarsaparilla is an excellent adjunct to the latter, because it maintains the health, not because it exerts much influence over the disease. In some instances, the iodide is a good adjuvant too, but not so good, in our opinion, as the zarsa.

It is in the cachectic cases, those cases which either result from the abuse of mercury, or from the compound agency of syphilis and mercury on a peculiar habit—it is in those cases, we say, that both the iodide and sarsaparilla are peculiarly serviceable. It is difficult to say which is most so: an injury would be inflicted on medicine were it deprived of either. With some persons the iodide acts best—with others sarsaparilla—with most, it is better to combine the two.

We fancy that we perceive, what usually happens, a very indiscriminate and therefore a mischievous use of the iodide. It is astonishing what a disposition men's minds have to run only in a groove. Some people prescribe nothing but creosote one moment—nothing but iodide the next.

STATE OF THE FACULTY AND OF PHYSIC IN ALGIERS.

Physic would seem to be at a low ebb in Algiers. The doctors certainly are so. The following extract from an extract in the Medical Gazette will exhibit the state of things in that country.

"Dr. Bohn first introduced vaccination, and practised it in the family of the deposed Dey himself, who, however, did not give him a princely fee; and, generally speaking, people are here unwilling to give aught to physician or apothecary.

As to the native physicians, the Dey had a kind of protomedicus, who decided medico-legal questions, and created other physicians for a few piastres, without being exactly able to read or write. If a man was able to shave well, if he

could compound a plaster, and cure a hurt, he bought the privilege, and prescribed at his own pleasure the whole contents of any of the six Moorish apothecaries' shops; bark with or without theriaca at all times; and in all fevers, opium, sarsaparilla, calomel, pimento, cantharides, and opodeldoch. Ismael Ben Mehmed enjoyed the greatest share of public confidence; he gave Dr. Schönberg an extract from the Arabic work of Ben Huesina, who lived 700 years ago, and a catalogue of his own drugs. His shop, the largest in the town, contained 70 jars, 30 bottles, 20 boxes and several drawers. He obtained medicines from abroad, prepared others himself, and possesses a still and retort. He is afraid of mercury against syphilis, and thinks he can do without it.

Ismael Ben Mehmed is acquainted with remittent and intermittent fevers, and their varieties. His surgical apparatus consisted of a common case of dressing instruments."

Dr. Corrigan's new Mode of effecting the Inhalation of Iodine, &c. in Pulmonary Diseases.

Dr. Corrigan patronizes the inhalation of medicated vapour in pulmonary diseases, but justly objects to the inhalers previously used. He offers the following suggestions.

That inhalation as a remedial process, may obtain a fair trial, it is requisite,

1st. That the apparatus should be simple in its construction, and easily kept in order.

2nd. That it should be capable of keeping up a supply of vapour for any length of time, and that the evolution of the vapour should be steady, and should be easily regulated.

3rd. That it should also furnish a sufficient supply of aqueous vapour, to prevent any irritation of the larynx or lining membrane of the air tubes.

4th. And most important of all, that its employment should entail neither trouble nor fatigue on the invalid.

The apparatus he patronises is thus described:—

There is a light open iron wire frame, about eighteen inches in height; at the bottom is a spirit lamp. At the proper height above it, is an evaporating porcelain dish, about six inches diameter. Above this is a glass globe with its neck downwards. In the neck of the globe is a cork bored, and through the opening is drawn, moderately tight, a short plug of cotton wick, such as is used in a spirit-lamp; in the glass globe opposite the neck is drilled a pin hole, to allow air to pass in, according as the fluid within drops out, through the neck. To use it, the porcelain dish is filled with hot water, the spirit lamp is lighted, and as soon as the water in the dish has begun to boil, the glass globe containing the tincture of iodine (if this be the substance used) is placed as shown in the sketch. The rate at which the fluid in the globe shall percolate the cotton wick, and drop into the hot water underneath, is easily regulated. If it do not drop with sufficient rapidity, one or two of the threads of the cotton are to be removed. If it drop too rapidly, this is corrected by pressing in the cork more tightly, or introducing one or two additional threads of wick.

This apparatus fulfils, I think all the conditions required It is simple in construction and most easily regulated; there can be no sudden and injurious evolutions of vapour from it but drop by drop, the evolution gradually, and steadily goes on; and the air which the patient is breathing, may be maintained in any required degree of impregnation, while the impregnation can be kept up for any length of time. The medicated substance employed, is always vaporized with a sufficient quantity of aqueous vapour, to prevent any irritation of the larynx, or lining membrane of the air tubes; and lastly, employment of the apparatus for any duration, entails neither trouble nor fatigue on the invalid.

UREA IN THE BLOOD IN CHOLERA.*

In a case which presented all the features of malignant cholera, and which proved fatal on the 12th day, the deficiency of urea in the blood induced Dr. Rainy of Glasgow, to investigate the state of the blood.

Four ounce measures of blood were taken from the larger vessels and heart; it was partly fluid, partly in small coagula. As the serum could not be separated in sufficient quantity for examination, the whole was mixed with 12 ounce measures of alcohol, well stirred for some minutes, and then allowed to digest for a day at a moderate temperature. The albuminous and colouring matter was precipitated in reddish brown flakes. The alcoholic liquor partly floated on the top. The mixture being thrown on a filter of fine cotton cloth, ten ounce measures of fluid passed through, by the aid of gentle compression, the rest being retained by the spongy precipitate. This filtered fluid was transparent, and almost colourless. It was evaporated at a temperature not exceeding 160° Fah. During this process it became turbid, and deposited a considerable quantity of fluid oily matter, which was separated. When reduced to the consistence of a thin syrup it had a decidedly urinous smell; and a minute portion being tested, yielded distinct pearly scales with nitric acid and with oxalic acid. The syrupy fluid was still turbid, apparently from the presence of oily matter, probably phosphoric fat. In order to separate this matter the extract was diluted with a little water, to render it perfectly fluid. It was then agitated with a small portion of æther, which dissolved the oily matter, and left the watery fluid colourless and almost transparent. This fluid was again evaporated, at a very gentle heat, to the consistence of a thin syrup; and nitric acid being added, there was a slight effervescence, followed by a deposition of pearly crystalline scales. These being compressed between folds of filtering-paper and dried, weighed 5 1-10th grs. They had all the characters of the nitrate of urea, and, according to Prout's analysis, may be considered equivalent to 2 7-10ths grains of urea.

This quantity, then, was actually separated from four ounce measures of blood; but as the whole mixture of blood and alcohol measured 16 ounces, and the filtered liquor measured only 10 ounces it is evident that the filtered liquor contained only 10-16ths of the urea present in the blood. From these data it will follow that the whole urea actually present in the blood amounted to 2 7-10 X 16-10ths = 4 3-10ths grains, or rather more than one grain to each ounce measure of blood, without making any allowance for the small quantity remaining in the fluid, to which the nitric acid was added.

MR. SMEE ON MOULDING TABLETS FOR FRACTURES.†

Mr. Smee has been making some experiments with the view of ascertaining the best method of forming moulding tablets.

Having frequently noticed that the composition of gum arabic and whiting, when dry, possessed great hardness and toughness, and yet was so free from brittleness that it could scarcely be pounded in a mortar, he was determined to ascertain how far it would answer to make tablets which might be used for extemporaneous splints.

For this purpose a piece of coarse sheeting was copiously brushed over on one surface with a thick solution of gum, after which it was covered with a composition made by rubbing whiting with mucilage, continually adding the powder

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* Med. Gaz. Jan. 5, 1839. † Med. Gaz. Feb. 23.

until the whole was of the consistence of a thick paste; a second piece of sheeting was now rubbed over on one side with the solution of gum, and the moistened side applied upon the composition with which the piece of sheeting had been covered, and we thus had two thicknesses of sheeting with an intervening layer of the composition of mucilage and whiting, the thickness of which may be increased or diminished as strength or lightness is desired. The whole was then dried, and formed a tablet about the thickness of slight pasteboard.

"The experiment succeeded beyond my most sanguine expectations; for, whilst the tablet remained dry, it was exceedingly hard, and, when sponged over with a little warm water, became so yielding, that, by moulding it with the fingers, a cast could be taken of any part of the body. The hand and knuckles were defined with great accuracy, and I succeeded, by a little management, in taking a cast of the greater part of the face. It is sometimes advisable not to allow the substance to dry upon the part on which it is moulded; but after the depressions and elevations have been traced with the fingers, it should be carefully removed, and partially dried before the fire; and as soon as the texture is sufficiently dry to retain its shape, it may be placed near a stone, or even on the hob of a grate, without fear of corrugating or becoming otherwise deformed. In most cases, however, this drying is quite unnecessary, it being requisite only to envelop the moist tablet with a bandage. A cast thus taken is extremely hard and tenacious, so that when not much thicker than a wafer, it may be struck violently and repeatedly against any hard substance, and not be destroyed. It possessed but slight flexibility, and, after having been bent, it returned to its previous form, shewing considerable elasticity. It was neither liable to be torn nor broken; and lastly, it possessed the advantage of lightness combined with durability."

The solution of gum which was found most adapted contained 10 or 12 oz. of gum to the pint of water. Coarse old linen sheeting forms the best kind of cloth.

The application of these tablets is rather extensive; they may be used with great advantage for all fractures of the metacarpal bones; also for those of the fore-arm, or even for the humerus.

When the humerus is fractured, the method which has been adopted is to cut a piece of paper somewhat into the shape of the required splint. It should cover a portion of the pectoralis major, and extend as high as the bend of the neck, and include the whole of the scapula. From this broad plate a piece descends to the bend of the elbow, and should be sufficiently wide to cover about two-thirds of the outer part of the arm. The paper is then placed on one of the prepared tablets, which is cut to a similar shape. The piece thus prepared is moistened until it becomes perfectly soft, and it is then moulded on the arm and neck. From the general shape of these parts, there will be found a superfluity of substance about the deltoid which must be pinched up and turned down, so as to form a fold over the other part. The splint then may be in a degree dried, and its inner surface lined with lint. The whole is to be enveloped with a starched roller.

The mode in which I have made splints for the leg, is first to obtain the exact shape by drawing a piece of sheeting or paper round the leg, and marking the part which corresponds to the tibia for the whole length of the leg, and continuing the line on the foot to the extent that it may be considered necessary to cover.* By this means, it is apparent that the exact size of the limb is obtained; but as the leg is to be enclosed by two splints, it becomes necessary to divide the

* "Either splint should overlap the heel and under surface of the foot in cases where they are used immediately after the accident, but where their application is delayed, this is of no importance."

cloth into two, which will give an exact pattern of either splint. These splints, are to be moistened and moulded, and after being first lined with lint, or leather, the whole is to be enveloped by a roller soaked in boiled starch."

Of course those splints are not to be applied until swelling and inflammation have subsided. Mr. Smee's composition deserves a trial.

OBSERVATIONS ON THE EFFICACY OF THE SALTS OF SILVER IN THE TREATMENT OF SECONDARY SYPHILIS. BY WILLIAM P. JOHNSTON, M.D. OF GEORGIA, AND JAMES TRUDEAU, M.D. OF LOUISIANA.

These physicians communicate to our American contemporary, the Medical Examiner, the results of experiments by M. Biett, on the use of the salts of silver in primary and secondary syphilis.

These salts were recommended by M. Serre, of Montpelier, in 1813. M. Serre published twenty-five cases, of which we will only say that they by no means proved the points he brought them forward to establish. The Reporters, in the paper before us, relate five cases from the practice of M. Biett. We shall not specify them, but content ourselves with the following brief summary of M. Biett's conclusions—conclusions, as regards the salts of silver, which coincide exactly with our own experience on the subject.

"In the above cases, which we have been obliged to condense very much, it will be seen, that the salts of silver have invariably failed in producing the slightest modification in the disease. M. B. in his Clinical Lectures, says that he has employed the different preparations of silver recommended by Mr. Serre, in a vast number of cases, and that he has continued the treatment until the amount taken was thirty grains, without ever having seen it produce 'beneficial effects, and in some cases to the manifest injury of the patients.'

In conclusion we beg to say a few words of the remedies which, in the hands of Mr. B. have been so successful in the treatment of this form of disease. The proto-iodide of mercury, introduced by him in the treatment of syphilides, is that to which he gives the preference. It is given in the form of a pill in doses of one grain, with an equal quantity of lactucarium, night and morning. This remedy, in his hands, rarely produces salivation. He employs, in conjunction, the vapour baths, which he regards as a powerful agent in completing the cure and restoring the healthy functions of the skin. Opium plays an important part in the formulary of M. B. He employs it in cases where irritation of the stomach and bowels has been produced by the metallic preparation, or where the system generally is in a state of nervous irritability. His usual practice is to give one grain of the watery extract, morning and evening, during a month, and then he resumes the treatment with the proto-iodide. Mr. B. says he has often seen opium produce a decided amelioration in the disease, when all other remedies have failed. He has also remarked cases where a modification produced by the proto-iodide has continued under its use until a complete cure was effected. The liquor of Van Sweiten and sudorific drinks, are sometimes employed. Simple cerate is the only local application for the ulcers, and even this is but rarely used. In support of the treatment of Mr. B., which, from having long and carefully observed it we can recommend, with the greatest confidence, we will quote the authority of M. Ricord. He says, 'the preparation to which I now give the preference, not only in the treatment of the secondary, but also in that of the primitive symptoms, is the proto-iodide of mercury.' Opium, he says, alone, or more frequently combined with other remedies, is one of the most useful agents in the treatment of this disease, and ought never to be neglected."

Observations on Various Diseases. By Robert James Graves, M.D.*

These observations, like all from Dr. Grave's pen, are possessed of interest and value. We shall select some.

1. *Neuralgia of the Larynx.*—This occurred in a young lady originally of vigorous constitution, but latterly suffering from menstrual irregularity and hysteria. The laryngeal affection had been considered to be inflammatory in the country, and had been treated with purgatives, leeches, blisters, antimonials, and finally mercurialization. No relief had been obtained, and she came to Dublin where she was placed under the care of Drs. Marsh and Graves, and Mr. Barker. The pain had become almost constant when we first saw her, but was by no means violent, except now and then when it used to become suddenly aggravated. These paroxysms of pain could not, even properly speaking, be called violent; they were however, distressing, amounted to a most annoying feeling of distress about the whole region of the larynx. There was no external tenderness, and the internal fauces were healthy. These gentlemen considered it an hysterical nervous affection. It was chiefly remarkable for a change of tone and weakness in the voice which invariably attended the paroxysms, shewing that the *rima glottidis* and the *chordæ vocales* were the parts chiefly implicated.

They first gave doses of carbonate of iron, which had the effect of rendering the attacks periodic. Every morning, at *ten o'clock to the minute*, the paroxysm commenced. The dose of iron was now increased, afterwards sulphate of quinine, and finally arsenic were employed, but without any corresponding improvement. The degree of suffering became, indeed, less severe, and its duration less protracted, but it appeared extremely doubtful whether the improvement was not owing more to time than to medicine.

"Under these circumstances we thought it prudent to desist from all active treatment, and we recommended change of air, scenery, and the use of chalybeate mineral waters. I believe she still continues to suffer, but in a less degree. A year has now elspsed since I last saw her. This case affords a striking example of the curious fact, that medicines administered for the purpose of relieving a disease more or less fluctuating or remittent in its character, will sometimes render it strictly periodic, with marked paroxysms and free intervals. Having produced so striking an effect with our remedies, we are apt to calculate with confidence on still further improvement, and we increase the doses of tonics with boldness and full of hope; disappointment, however, here awaits us, for no tonic will be found capable of effecting any further alteration or shortening of the fit. In such cases we cannot be too much on our guard, lest we injure the constitution by too frequent attempts to procure a diminution of suffering."

We have often thought that what appear to be the effects of medicines in these cases, are often not really due to them as particular drugs. The morale of the patient is disturbed, and it is difficult to separate mental affections from physical disturbances. It is a thousand to one that, in another case, the carbonate of iron would not give rise to periodicity of attack. We doubt whether the carbonate of iron, *as* carbonate of iron, did so in the case before us. Practitioners should beware how they draw conclusions on the effects of medicines in cases (more particularly in insulated cases) of hysteria.

Neuralgia of the Testicle.—Dr. G. has seen two examples of this painful

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* Dublin Journ. Jan. 1839.

affection within the last year. The first was a young gentleman of highly irritable nerves, who had studied hard and dissipated much; in him the paroxysms of pain did not observe any very marked period, but returned daily at uncertain intervals, which grew shorter and shorter, until at last he had scarcely any respite day or night. There was no fever, and not the slightest appearance of local congestion or inflammation. When attacked with a paroxysm the patient would throw himself on the floor, and roll about in the greatest agony, covered with a cold perspiration. This case yielded to large doses of carbonate of iron freshly prepared, and frequent inunction of the testicle and cord with belladonna ointment. The second case of neuralgia of the testicle occurred in a gentleman who laboured under neuralgic pains, decidedly of a gouty nature. In him the pain of the cord and testicles used to come on every afternoon about four o'clock, and continued for several hours. The pain, though considerable, did not approach the degree of agony experienced in the first case. It was at times, however, so severe as to compel him to groan aloud. This neuralgia of the testicle disappeared after a few d ys, and was replaced by a violent gouty pain in the loins and right hypochondrium. The latter yielded to the usual local treatment and the use of colchicum internally.

We would observe that neuralgia of the testicle, or "irritable testicle," occurs under various circumstances. Perhaps one of the most common causes is abstinence from sexual intercourse, after previous indulgence in it. A short time ago, we were in attendance on a gentleman, of a sanguineous habit and of rather strong passions, who became a widower. The consequence was irritable testis under which he laboured at intervals for eighteen months. He then married, and has never since had any pain in the testicle. The pain in this gentleman was sometimes exceedingly severe, and, what is curious, he generally experienced relief from the passage of a large instrument into the bladder. Yet he had not stricture, though he usually experienced some irritability of bladder, at the time when his testicle plagued him.

In persons who are recovering from gonorrhœa, and who have merely slight discharge, or gleet, a certain degree of irritability of the testicle is not unfrequent. We have at this time under our care a young gentleman, who suffers in this way in both testes. It is difficult, in these cases, to determine, whether it is the condition of the urethra, or the abstinence from sexual intercourse, or both, which gives birth to the affection.

We have seen in gouty individuals, a degree of tenderness, almost amounting to positive neuralgia in the testis. But we never saw it precede a distinct gouty attack. Dr. Graves's is a well marked instance of this.

But irritability of the testis, and even positive inflammation, are well known to wait on affections of the kidney. And this organ is so frequently disturbed in gout, or in the gouty, that we cannot wonder at the latter being prone to testicular disorder. And it must be recollected that the gouty are usually plethoric, whilst, plethora, so far as we have seen, disposes to irritable testis, more, perhaps, than any other condition.

It is absurd to suppose that a complaint depending on causes of different descriptions will universally yield to one remedy. We shall not touch on the methodus medendi, further than by remarking that there is one local remedy which is almost always useful—belladonna,—whatever other measures may be requisite.

3. *Gout and Sinapisms.*—"Within a short period of time I have seen three remarkable examples of the relief which vital organs may experience when gout appears in the extremities. A publican applied to me with violent pain in his stomach, which came on every evening, and lasted many hours in spite of every remedy. In a day or two he got a violent attack of podagra, and had no more

internal suffering. A gentleman whom I attended with Mr. Barker, was attacked with cerebral symptoms and indistinctness of vision and utterance. We feared hemiplegia: the next day he got severe podagra, and was able to speak perfectly well, and see distinctly. He was 75 years of age. At the very same time I was attending, with Mr. Colles and Mr. Haffield, a robust and powerfully-made gentleman, aged 74, who having had symptoms of flying gout, and shortly after a bowel-complaint, made use of the salt water plunge bath. This imprudent act brought on a violent and nearly fatal hemoptysis. He was bled twice, and got the usual styptics with relief, but his improvement became much more rapid when gout appeared in both his feet."

Dr. Graves thinks that sinapisms which act slowly are the best. To fix gout in a part, says he, e. g. in the foot, our application must act much more gradually, and must excite the deeper-seated tissues. These objects may be obtained by mixing one part of strong and fresh ground mustard powder with three of flour, and adding as much treacle as will convert them into a viscid paste, which may be spread like a plaster on linen, and applied to the part. This will be borne for four or six hours, and will cause a redness which will last a whole day. The proportion of flour may vary according to circumstances.

4. *Mr. Cusack's Mode of Applying the Nitrate of Silver to Enlarged Amygdalæ.* The solid stick of lunar caustic, or some of the latter in powder, and placed in a proper instrument, must be kept steadily pressed against a particular spot of the enlarged gland; two three, or five seconds will suffice to secure the formation of a small eschar, which falling out, will leave in the part, when healed, a slight depression like the largest pit formed by a small-pox pustule. When this has been effected, which is usually in about five days, a similar proceeding must take place with the other amygdala; and so on with each, turn about, until the desired reduction of size has been accomplished. When the glands are large, this process usually requires about six months; it is slow but sure; and must be intermitted when any accident gives rise to temporary sore throat or to catarrh.

Dr. Law on the Exhibition of Mercury in Minute Doses.

Before we make any observations, we shall quote the following case—and remarks.

"A young man recently came under my care affected with syphilitic rheumatism. His pains were very distressing, and completely interfered with his sleep. He had undergone a variety of treatment, but without any relief. Just before he became my patient, he had taken fifteen grains of blue pill daily for six weeks, without his mouth becoming sore, or his pains experiencing any benefit. I found that while he was under this mercurial treatment, he was neither restricted in diet, nor confined to the house; I determined to try mercury with him, but under different circumstances. He was put on low diet; and in order to insure his remaining in bed, his clothes were taken from him; he was then directed to take two grains of calomel, and a quarter of a grain of opium, thrice daily. He had only taken twelve grains of calomel, when his mouth became sore, and salivation ensued. His pains then began to yield, and soon disappeared altogether. Thus, with twelve grains of calomel, exhibited with attention to circumstances calculated to promote the action of the medicine, we succeeded in accomplishing what fifteen grains of blue pill, exhibited daily for six weeks, (630 grains) but without such attention, failed to effect. We were quite sure when he came under our care that he was under the influence of the mercury he had previously taken. The result of this case, with many other similar ones, confirmed us in an impression that we had long entertained, that there is not

in the *Materia Medica* an agent whose just pretensions are more compromised by a slovenliness and want of care in its exhibition, than mercury. And although, in some cases, the peculiar circumstances under which the medicine is exhibited, prevent the conditions of restricted diet and confinement being complied with; and therefore, the physician prescribes it under disadvantages, of which, although he is aware, yet he cannot control them; still we believe, from the little importance attached to these conditions when they might be enforced, that most physicians have yet to learn to what extent they modify the action and effects of the medicine. Upon inattention to these circumstances we should charge, in many instances, the complete failure of mercury to affect the system; and in all, that when the system is brought under its influence, so much more of it is required to produce this effect."

Dr. Law is certainly mistaken if he supposes that well-informed physicians and surgeons are ignorant that warmth and low living accelerate and augment the specific action of mercury. There are few amongst us who are not aware of that.

Patients are not usually submitted to this regimen, because as a general plan it would probably rather be injurious than beneficial. Many under such circumstances would become profusely salivated, and we should return to the old regime of spitting-pots and erethismus. The great improvements in the treatment of syphilis have been in discarding confinement and low living, in allowing moderate and judicious exposure to the open air, in enjoining a reasonably good diet and in combining with the mercury, sarsaparilla or other tonics, which maintain the general health, and certainly do not promote salivation. The benefits of this plan have been displayed on a large scale in the Lock Hospital of London, and we dare say elsewhere, and occasional exceptions do not eat up the rule. That there are such exceptions all men of experience are sensible. Though fully impressed with the value of open air and moderately good living in the treatment of syphilis, yet we now and then meet with instances in which we cannot shut our eyes to the superiority of a contrary mode of proceeding, and in which we enjoin confinement and court salivation.

But Dr. Law proceeds to another inquiry, and has arrived at another result:— *the very small quantity of mercury required to affect the system, when exhibited in minute doses at short intervals.*

"The quantity was much smaller than we could have had any idea of. The first cases in which we made trial of this mode of giving mercury were chronic cases, such as we felt, would, without injury or detriment, await the result of our experiment. We made no particular selection of cases, but such as were labouring under affections which we ordinarily treated with mercury. We directed one grain of calomel to be mixed up with a sufficient quantity of extract of gentian to make a mass to be divided into twelve pills, one of which was to be taken every hour. We found, in some cases, salivation produced by twenty-four pills, or two grains of calomel; and seldom were forty-eight pills, or four grains, required to produce this effect. We would say, that thirty-six pills, or three grains, was the average quantity required to effect salivation. We exhibited blue pill in the same way, and found the mouth to become sore from six grains."

Dr. Law specifies many other cases. We will notice two or three.

Anne Carey, aged 46, affected with periostitis of the femur, had her mouth made sore with two grains and a half of calomel.

John Curran, aged 40, labouring under sub-acute rheumatism, with enlargement of the joints of the wrists, was profusely salivated with three grains and a third of calomel: a decided amendment followed.

John Lynch, aged 36, affected with indolent enlargement of both testicles, particularly the right, was ordered a twelfth of a grain of calomel every hour, and to rub ten grains of mercurial ointment on the right testicle every night. He had only taken two grains and two-thirds of a grain, and rubbed twice, when

he became salivated. The induration and enlargement of the testicles completely disappeared.

Anne Clare, aged 40, affected with periostitis of the clavicle, was salivated with three grains, and ten-twelfths of a grain of calomel. Salivation continued for a month.

It is unnecessary to swell the list. But the following case may be added to it.

"We anxiously looked out for a case of Iritis to test this method of exhibiting mercury, when one presented itself, in John Gleece, labouring under syphilitic rheumatic pains, with Iritis of the right eye. The conjunctiva was moderately injected, the cornea unusually prominent, and the pupil irregular. We ordered him the twelfth of a grain of calomel every hour. When we paid him our second visit, we found the eye quite clear, no unusual vascularity, and the pupil quite regular. He had only taken eighteen pills, or a grain and a half of calomel; but the gums exhibited no marks of being affected. As the rheumatic pains continued, we determined to persevere in the use of the mercury, and in the same fractional doses, till the mouth became affected. We were surprised to find that this effect was not produced until he had taken one hundred and seventy pills, or fourteen grains of calomel. This seemed to be by much the most refractory case we had met with; however we discovered, that, in order, as he thought, to make assurance sure, instead of complying with our directions of only taking one pill every hour, after the second day, and after experiencing the benefit he received from eighteen, he took forty-eight within twelve hours. So that the case, so far from constituting an exception, by its negative results confirmed our point."

It certainly does require some confidence in hypothesis to believe that the additional quantity prevented salivation. We confess that we are sceptical. Other things being the same we feel a great difficulty in crediting the homœopathic supposition that a quantity minus occasions an effect plus.

But however this may be, the facts stated by Dr. Law are by no means devoid of practical interest. Few, perhaps, supposed that a very small quantity of mercury may by management be made to produce a greater given result than a quantity much larger in different circumstances.

Shortening of the Neck of the Thigh Bone, independently of Fracture, in Early or in Middle Life. By George Gulliver, Assistant Surgeon to the Forces.

In old subjects the neck of the thigh bone is well known to become in many cases shortened, and to form a less considerable angle with the shaft, so that the head of the femur sinks, and the limb is diminished in length. These changes are familiar.

But it is not generally understood that in early life, and at any period antecedent to old age, changes of a similar character may ensue, and a mere contusion of the hip may give rise to interstitial absorption and alteration of the bone, attended with shortening of the limb, and, consequently, simulating fracture. It is to establish the occurrence of such a series of changes that Mr. Gulliver has published the following cases. It must, of course, be most important to be aware of them, for a patient may be much incensed and a surgeon much disgraced, if deformity follows what the latter considered a mere contusion.

Mr. Gulliver relates four cases, but as the two first were not fatal, and afforded positive evidence of the actual nature of the injury, we pass them over. We shall therefore confine ourselves to the third and the fourth.

Case 3. John M'Grath, aged 30, 2d Battalion Rifle Brigade, was admitted into regimental hospital at Malta on the 30th June 1828, with a severe contusion of the right hip, from a fall over a wall twelve feet high, when drunk. No symptoms of fracture presented. He was discharged on the 7th of August following with very slight lameness, but continued to do the active duty required by his regiment, although he occasionally complained of weakness in the injured part. There was manifest protuberance of the right hip, and appearance of shortening of the limb, with an awkwardness in marching. On the 1st August 1830, he committed suicide.

On examination of the body, the neck of the thigh-bone appeared somewhat shortened, and forming nearly a right angle with its shaft, the upper part of the head being just level with the summit of the great trochanter. There was some adventitious bony matter near the trochanter at the basis of the neck, and an increase of density and thickness of the upper part of the shaft. The capsule of the joint appeared uninjured; but the round ligament had apparently been detached from the head of the bone, to which it had acquired a new connexion near to its original site.

Case 4. J. Fox, aged 32, after a service of eight years in the West Indies, died of *phthisis*, for which disease he had been two years under treatment in hospital. A long time after his confinement it was observed that his right inferior extremity was emaciated, but there was no note of any affection of the limb previous to his admission into hospital.

At the *post mortem* examination, the right inferior extremity was found, by measurement as in the preceeding cases, to be at least an inch and a-half shorter than the other, and the extent between the *pubis* and trochanter of the affected side was diminished in a corresponding manner. The limb was much emaciated, but its position was natural, and the motions of the coxofemoral articulation were not impaired.

Having removed the upper part of the *femur*, Mr. G. found its neck absent. The head was flattened and expanded considerably; it was approximated to the shaft so as to be situated much below the great trochanter. A section of the part was made, when the upper and lower shell of what remained of the neck, was seen to be formed of compact bone, quite equal to the ordinary thickness in this situation, and the reticular texture of the bone was more dense for some distance from the edges, so as to form an indistinct line on either side of the most contracted part towards the centre. The *cancelli* were filled with caseous matter, in some places nearly colourless, in others tinged with dark grumous blood. The acetabulum was diminished in depth, but enlarged laterally, so as to correspond with the altered shape of the head of the thigh-bone. The cartilage of the articulation presented throughout its usual thickness and consistency, and was generally smooth and lubricated with synovia. Mr. G. examined the other thigh-bone, and found its form and condition in every respect natural.

Mr. G. now sought information respecting the history of the case from some of Fox's comrades who had served and come home with him. From them it appeared, that Fox had received a fall about three years before at the island of Nevis, in consequence of which he often complained of pain about the hip, but continued to do his military duty many months after, never having been confined on account of the accident.

The morbid parts described in this and the preceding case, are preserved in the museum of the Army Medical Department, to which the profession have free access through the liberal arrangements of the Director-General.

Mr. Gulliver remarks:—

"The case of Fox appears to afford a well marked instance of gradual removal of the neck of the thigh-bone in consequence of action induced in that part by injury. From the history of the case it is impossible to suppose that fracture

had occurred; and it is improbable that any considerable shortening had taken place previous to his admission into hospital for the thoracic affection, since he performed the duties of a soldier long after the accident, without any lameness apparent to his comrades. We are, therefore, constrained to suppose, that the removal of the neck of the bone had been effected during his very long confinement in hospital for the pectoral disease,—a circumstance not very favourable to the recommendation by Dr. Hawkins of the horizontal posture as a remedy in such cases, and equally adverse to the opinion of those continental pathologists, who attribute this alteration in the neck of the thigh-bone to the gradual operation of the superincumbent weight of the body. But Dr. Knox has long since remarked, that it is unnecessary to have recourse to such an explanation of the cause of interstitial absorption of bone; and in the museum at Chatham this phenomenon is exhibited in the spine of a young man, in which the change took place in the recumbent posture."

We think that these observations and cases should receive attention. Perhaps they are not yet sufficiently precise to give a satisfactory character to the deductions which appear to flow from them. But they go very far towards establishing the occurrence of interstitial absorption of the neck of the thigh-bone, as a consequence of comparatively trivial injuries at any period of life. No unimportant fact. We have already said what we think no more than due to the zeal and intelligence of Mr. Gulliver. We shall be always happy to introduce him to the notice of our readers. It is a grateful task to a man of a liberal mind to extend the hand of encouragement to merit.

Cases of Dissecting Aneurysm.

1. Case of Anomalous Aneurysm of the Aorta, resulting from Effusion of Blood between the Laminæ composing the Middle Coat of that Vessel. By C. W. Pennock, M.D.

2. Account of a Case of Dissecting Aneurysm seen at an Early Stage. By Paul B. Goddard, M.D.

Most of our readers are probably aware of what is meant by "dissecting aneurym." It is that form of aneurysm, in which the blood becomes effused *between* the tunics of the artery, separating and dissecting them from one another, perhaps for a considerable distance.

A case of this kind lately occurred in the dissecting-rooms of St. George's Hospital, in Kinnerton-street. Unfortunately the parts were too much destroyed before we saw them to admit either of accurate description, or of preservation. But the internal and middle coats of the aorta had given way above the diaphragm, and a large quantity of coagulum extended, immediately beneath the external coat, as low as the bifurcation of the vessel into the common iliacs.

Dissecting aneurysm is sufficiently rare to made well-attested cases of it matters of rational curiosity. And as there are probably some medical men who are unacquainted with its characters, we shall introduce the two following facts from our valued American contemporary.*

Case 1. A black woman, aged 75, entered the Philadelphia Hospital, December 20, 1835, with the following symptoms:—

Countenance anxious; position in bed elevated; œdema of the legs and ankles; pulse 90 per minute, full, tense, intermittent; slight muscular movements cause

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* The American Journal of the Medical Sciences, November, 1838.

palpitations of the heart; oppression but no pain in the præcordial region. Over the region of the heart percussion is dull in a space, the outline of which corresponds to the form of the pericardium, which extends downwards from the cartilage of the third rib the length of sternum, and laterally, on a line drawn through the nipple, from one inch to the right of the middle line of sternum to the margin of left axilla. Impulse of the heart forcible; rythm nearly natural; first sound roughened, having a rasping sound strongly marked opposite the cartilages of the third rib and along the upper third of the sternum; second sound dull, somewhat prolonged.

The symptoms had commenced eight years previously. During the Summer of 1827, whilst using great muscular exertion, (pumping water,) she was seized with sudden and severe pain at the sternum, attended with violent action of the heart, and a sense of suffocation. The pain increased in violence, and after remaining fixed in front of the chest for two weeks became lancinating, extending from the sternum to the back, and was attended by a short cough. The pain continued for nearly three months, when the dyspnœa increased. This cough, and palpitation continued with varying severity, and attended with occasional œdema of the lower limbs, up to the time of her admission into hospital.

We need not particularise the treatment nor the details of the case. Suffice it that the dyspnœa, &c. increased, and, on the 26th of January, the patient died.

Dissection. We pass over other circumstances, to arrive at the state of the heart and the aorta.

"*Heart* much enlarged, more than double its natural size; right cavities more dilated than those of the left; coagula in both ventricles, especially the right. The parietes of the left ventricle measure seven-eighths of an inch in thickness, those of the right ventricle natural. The semilunar valves of the aorta partially ossified; the mitral valves opaque, thickened, with cartilaginous depositions on the free edges; semilunar valves of the pulmonary arteries and tricuspid valves, natural. *The aorta* is apparently much dilated, and, when cut into, presents the remarkable appearance of being a double vessel. The internal vessel is the aorta proper communicating directly with the heart, and is nearly surrounded by another vessel of much larger diameter, which, commencing opposite the great sinus of Valsalva, accompanies the aorta until it divides into the primitive iliacs and terminates in a *cul de sac*. The aorta communicates with the external vessel by a valvular fissure half an inch in length, with rounded edges, which penetrates through the serous and *partly* through the middle coats, and which is situated half an inch above the semilunar valves. The external vessel has no communication with the heart except by this opening. The innominata, subclavian, and left carotid arteries have each double orifices communicating with the aorta and external vessel. The innominata near its mouth is divided by a septum into two portions; the septum terminates in a semilunar edge half an inch above the aorta. In the left carotid the appearance of double vessels is presented for the space of two inches; each has separate openings, one communicating with the aorta, the other with the external vessel. In the left subclavian, on the contrary, there is no double vessel; the orifices opening into the aorta and external vessel being merely formed by a valvular septum at the mouth of the artery. The intercostals of the right side of the thorax communicate with the aorta, whilst those on the left open into the external vessel. The cœliac, superior and inferior mesenterics, renal, and other arteries given off in the abdomen above the bifurcation into the primitive iliacs, communicate with the aorta. The aorta is perforated by numerous foramina, by which, communication is established between it and the external vessel. Anteriorly the external vessel is composed of three coats; an outer, which is cellular; a middle, formed of muscular circular fibres, and an internal, which resembles the serous tissues, but is of variable thickness and presents various colours in different parts of its extent. The cellular coat and the lamina of muscular fibres are continued around the posterior

semi-circumference of the aorta, where the muscular circular fibres uniting with the yellow elastic tissue of that artery form in that portion of it its middle coat. The internal membrane of the external vessel, on the contrary, is reflected upon the anterior semi-circumference of the aorta, and the two vessels are there firmly connected by tendinous bands resembling chordæ tendineæ, which pass from one vessel to the other. These bands being cut, the lining membrane may be readily dissected up; it is of a dull white color, semi-transparent, and evidently takes its red and yellow appearance from the subjacent red fibres of the external coat and from the elastic tissue of the aorta. The structure of the aorta in its posterior semi-circumference is normal; in its anterior circumference, the yellow elastic tissue is devoid of the external muscular fibres; the cellular coat is also wanting and is replaced by the reflected membrane of the outer vessel. Numerous ossific deposits exist in the aorta between its serous and elastic coats, but none in the external vessel. Immediately above the bifurcation into the primitive iliacs the external vessel ceases—the red muscular circular fibres and yellow elastic coat become firmly united in the entire circumference of the aorta, and the structure of the iliacs and that of the other arteries throughout the body present the usual arterial formation."

On referring the preparation to Dr. Horner, Professor of Anatamy in the University of Pennsylvania, the latter gentleman communicated it as his opinion, that, at some period, a laceration of the internal and middle coats occurred in the great sinus of Valsalva; and that a column of blood was introduced under the cellular coat so as to detach its semi-circumference from the middle coat down to the primitive iliacs, and also produce a similar condition in the roots of the large branches from the summit of the arch of the aorta.

"Further dissection showed the identity of structure of the middle coat of the external or aneurysmal vessel with that of the aorta, and the intimate union of the two in the posterior semi-circumference of the artery. This induced the idea that the blood which had been propelled through the laceration near the sinus of Valsalva had not penetrated the entire thickness of the middle coat of the aorta, but had separated its external from the internal lamina. In order to ascertain whether a separation of this kind could be effected by a fluid thrown between the laminæ of the middle coat, experiments for that purpose were instituted. A small tube with a capillary extremity was introduced between the laminæ of this coat of the artery, and water was forced through it from a syringe in a direction parallel to the sides of the vessel. The result was, that the middle coat was separated in three distinct laminæ.* These views and facts were submitted to the examination of Professor Horner, who fully agreed with me in the idea, that the factitious vessel was the result of the separation of the external from the internal lamina of the middle coat, and that its internal membrane was formed by coagulable lymph, which had simulated the appearance of a serous tissue.

This case may, therefore, be regarded as analogous to those cases of dissecting aneurysms reported by Morgagni, Nicholls, Laennec, Guthrie, M'Lacklin, Shekelton, but differing from them in this, that the aneurysm in this instance was formed *between* the laminæ of the middle coat, and that the blood in circulating through the factitious vessel supplied the intercostal arteries of the left side. My search for a parallel case has been unsuccessful, and I am compelled to consider that if this form of aneurysm be not *unique*, it must be of extremely rare occurrence. The remarkable lesion of the innominata and left carotid arteries, where the blood after separating the tunics of these vessels as in the aorta, and forming two

* "A specimen in my possession prepared in the manner above mentioned by my friend Dr. Bush of Wilmington, Del., whilst resident physician of the Hospital, shows the separation very satisfactorily."

channels for its passage returns through another rent into the canals of the arteries, is similar to the two cases reported by Mr. Shekelton."

Dr. Pennock remarks that the disease probably had its origin, eight years before the patient's death, during her violent exertion in pumping.

A coloured plate accompanies the description, but the latter is intelligible enough without it.

Case 2. "In January, 1836," says Dr. Goddard, "I was requested by Dr. William Harris to make an examination of the body of a woman who had died under the following circumstances: This woman, who was cook in a respectable family in this city, was taken suddenly ill about five o'clock in the afternoon, whilst making some exertion, and complained of faintness and oppression in the region of the heart. Dr. Harris was immediately sent for, and caused her to be bled, which relieved her considerably. He saw her again in the evening and found her weak, but observed no symptoms indicative of immediate danger. He was called up to her, however, in the night, and found her moribund; death took place soon after midnight.

On examination, the pericardium was found distended with dark blood, firmly coagulated, estimated to amount to at least eight ounces.

The heart was large and fat, but its structure was normal in every part; the lining membrane of the aorta presented a yellowish appearance, studded here and there with minute ossific patches; about three-fourths of an inch from the semilunar valves a rupture was found nearly an inch in length in a transverse direction, which extended through half the thickness of the middle coat. A channel led both upwards and downwards from this point, which was produced by the separation of the laminæ of the middle coat, extending in width to one-half the circumference of the artery. The upper channel followed the arch of the aorta, and descended as far as the origin of the eighth intercostal artery, leaving the aorta at the summit of the arch to run some inches between the coats of the innominata, left primitive carotid and subclavian. It also ran along some of the intercostals. Many obstacles were thrown in the way of a more perfect dissection by the family, and the distance to which it extended in the vessels of the neck was not precisely ascertained.

The whole of this channel was occupied by a coagulum of dark blood. The lower channel, which appeared to be subsequently formed, and in all probability caused the death of the patient, extended from the rupture in the internal coat to the point of junction of the fibrous pericardium with the root of the aorta; it passed between the two, and then, by a rupture of the serous pericardium, escaped into its cavity."

Dr. Goddard remarks:—

"I believe that if the rupture had not extended into the pericardium, the woman would have lived, and an adventitious serous lining being formed for the new channel, it would have presented, in after-years, the same appearance as Dr. Pennock's preparation. There is one point very remarkable. In Dr. Pennock's case, there are seen in the angle between the new and the old channel, on either side, a number of filaments covered with the new serous lining and extending from the old vessel to the new; in my preparation, the same filaments exist, formed of shreds of the middle coat, but smaller than in Dr. Pennock's in consequence of the want of the adventitious covering."

CLINICAL REVIEW.

ST. BARTHOLOMEW'S HOSPITAL.

Observations of Mr. Lawrence on Gonorrhœal Rheumatism and Gonorrhœal Ophthalmia.*

1. *Gonorrhœal Ophthalmia.*—"Gonorrhœal affection of the eye appears in two forms; namely, inflammation of the conjunctiva, with puriform discharge; and inflammation of the external proper tunics, together with the iris.

The former affection appears in various degrees, from a mild and easily manageable disease to the most acute and rapidly destructive inflammation that can affect the eye. The case of Branch exemplifies the active modification, but not its most acute form. It shews that strong astringents, which are useful in the milder cases, are sometimes quite inapplicable in the more dangerous affection, even after considerable depletion. This case would no doubt have ended more quickly, and the patient would have been less weakened, had the plan of incisions through the chemosed conjunctiva, recommended in the valuable paper of Mr. Tyrrell, published in the Medico-Chirurgical Transactions, vol. xxi., been adopted. I have resorted to this plan lately, with excellent effect, in a private case, when the complaint came on in a week after the commencement of gonorrhœa, and seemed to have been caused by some of the patient's urine spirting into his eye. I did not see the case till the third day, when the incisions were immediately practised. A deep ulcer of semicircular figure, formed in the upper part of the cornea, near its edge; and the iris is now adherent to the cornea at that part, but vision is perfect.

In gonorrhœal inflammation of the external tunics and iris, the colour of the latter is altered; there is more or less pain, with imperfection and sometimes temporary loss of sight. These symptoms, however alarming, are not in general attended with lasting mischief to the organ, which may go through several attacks, as in the case of the gentleman above related, without permanent injury to its structure or functions."

So far as we have seen, our experience coincides in the main with that of Mr. Lawrence. But there is one point on which we would offer a remark or two. He observes that strong astringents are sometimes quite inapplicable in the more dangerous forms of gonorrhœal ophthalmia, even after considerable depletion. No doubt this is true, yet it seems to us that this species of faint praise is rather more damning to astringents than they deserve. We have seen extremely acute cases of gonorrhœal ophthalmia benefited remarkably by strong solutions of the nitrate of silver and by the ointment containing it, concurrently with general or local depletion, or after its adoption. In Mr. Lawrence's work on the ophthalmiæ, the value of extreme depletion is certainly over-rated, and that of strong astringents depreciated.

It has appeared to us that the tendency to gonorrhœal ophthalmia, as well as to gonorrhœal rheumatism, prevails in certain families. We are in the habit of attending two brothers, each of whom has had gonorrhœal ophthalmia and rheumatism, separately or conjointly several times. It has also appeared to us that persons prone to rheumatism independently of gonorrhœa, are more prone to rheumatism with gonorrhœa than others are.

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* Med. Gaz. Jan. 5, 1839.

2. *Gonorrhœal Rheumatism.*—"Although the disease is painful and sometimes obstinate, like ordinary chronic rheumatism it comes to a conclusion sooner or later, and the patient recovers perfect use of the affected joints. I have met with one exception to this observation, in almost the only case which I have seen in the female. It was that of a robust Irish girl, about 20, who came into St. Bartholomew's with a severe clap and inflammation with swelling of the knee. The joint became and continued highly inflamed, greatly swollen, most acutely painful, with the leg drawn up so as to bend the knee beyond a right angle, in spite of the most active treatment, embracing every measure that could afford any chance of relief. After some months the inflammation and swelling abated under the use of blisters, which were more serviceable than other means; the joint returned to its natural size, but was completely anchylosed in the bent position As the knee was recovering the elbow became affected: here the disease was less in violence and duration, but the joint remained with considerable limitation of motion.

In its active period gonorrhœal rheumatism requires the same treatment as other acute affections of joints; and it is subsequently benefited by blistering and other modes of counter-irritation. The internal remedies which I have found most useful after the active symptoms have been subdued are the hydriodate of potash, and the compound decoction of sarsaparilla, given in combination. I have usually administered four or five grains of the former in two ounces of the latter three times a day. I lately saw this plan very decidedly advantageous in a case where the feet, knees, and joints of the upper extremities, had been seriously affected, the feet having been swollen and red, and the other joints enlarged and very painful. Mercury had been tried without benefit to the local affections, and with injury to the general health. The hydriodate and sarsaparilla produced an immediate beneficial change; improvement went on steadily, the muriate of morphine being sometimes taken at night; and recovery was effected by continuing the remedies about six weeks, some weakness of the affected joints, with occasional pain, still remaining, although the patient was able to resume his ordinary occupations."

The iodide of potassium with sarsaparilla is undoubtedly a very valuable remedy in gonorrhœal rheumatism which has lapsed into a chronic form. But we have seen it fail to give permanent relief notwithstanding, and Mr. Lawrence's approbation of it is qualified.

We have seen the warm douche and shampooing cure a case which had resisted all internal, and all other external remedies.

CLINICAL OBSERVATIONS IN SURGERY, By N. R. SMITH, M.D. Professor of Medicine in Transylvania University.*

I. EXTIRPATION OF THE PAROTID GLAND.

On the 21st, August, 1835, Dr. Smith examined, with Dr. Bond, a tumor on the face of Miss Bryan of Baltimore County. It was located between the left ear and the angle of the jaw, in the precise situation of the parotid gland. It presented an abrupt eminence, something in form like a pointing phlegmon—its base not broad. The tumor was hard, occasionally affected with lancinating pains, and tender to the touch. It very much disfigured the patient, and was stated to be increasing in a degree which caused much anxiety.

Both Dr. Smith and Dr. Bond regarded the tumor as originating in a lym-

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* American Journ. of Med. Sciences, Nov. 1838.

phatic ganglion lying on the parotid, and they concurred in recommending its extirpation.

"In the presence of several of my pupils, August 25, 1836, I commenced the operation by making a vertical incision from the zygoma to the angle of the jaw; and deepening it, laid bare the external aspect of the tumor. On endeavouring to define its lateral limits with the knife, I soon discovered that I had to deal with the entire parotid, and proceeded accordingly. The disease affecting the organ had, in regard to consistence and form, distinguished itself from the surrounding parts. It was much more globular than the healthy gland—had a more distinct envelop of cellular tissue—and had receded in a degree from its confined situation. Penetrating the posterior part of the tumor near its surface, I soon traced out the facial nerve (portio dura) and separated it from the tumor to a considerable extent. I then doubted whether to attempt to disengage the tumor from beneath the nerve, or to divide the latter. Anticipating great embarrassment in the execution of the first plan, and fearing that serious irritation would be necessarily inflicted upon the nerve, I at once divided it. Paralysis of the muscles of the face on that side instantly resulted.

I then cautiously proceeded with the dissection of the tumor. Penetrating between its diseased lobules on every side were occasional bands of cellular tissue. These I divided with great caution, as I expected to find some of them involving the branches of the external carotid, which emanate from the parotid. Thrusting the index of my left hand beneath the tumor, I made them successively turn over its extremity; and carefully feeling for pulsation, I effected their division, sometimes with the knife, but more generally with a very narrow probe-pointed bistoury. When I felt pulsation I endeavoured to effect the laceration of the band with the finger, or the handle of a scalpel. Thus I proceeded till I had insulated the tumor with the exception of a single band attaching the upper and posterior part of the diseased mass to the deep temporal region. Occasionally there had sprung a small artery, but not furnishing sufficient blood to embarras the operation. I now divided the last band which attached the tumor, and a single artery sprung with considerable impetuosity. This I secured without difficulty with the tenaculum. Had I felt any considerable pulsation in it I should have included the whole band in a ligature before effecting its separation.

The tumor being now removed, I explored the cavity from which it had been taken. This extended quite to the styloid process; and the muscles arising from that point were seen with perfect distinctness. Not a vestige of any thing presenting the appearance of the parotid gland could be seen in the space usually occupied by it. Probably, however, that small process of the gland which extends forward on the cheek, termed socia parotidis, were left; but in the incision along the anterior border of the tumor I did not distinguish it or the duct of the Steno. The tumor is in my possession, and is of the size of a very large hickory nut."

The wound healed satisfactorily, though the paralysis of the face was permanent. In the course of some months the latter "had decidedly diminished."

Dr. Smith thinks that this case tends to reconcile the discrepancies between anatomy and practice in reference to the removal of the parotid gland. Anatomy seems to say that it is impossible—practice that it has been done.

The feasibility of the operation is, in Dr. Smith's opinion, to be explained by the facts furnished in the above instance. The tumor in its growth had assumed a harder consistence than natural, without having imparted disease to the surrounding parts. It was therefore better defined than the healthy organ. It had also become spheroidal; and from its size and hardness had necessarily receded from its confined situation. Its extirpation was therefore undoubtedly far easier than would be that of a healthy gland; and, because of the obliteration of the vessels from causes named above, attended with far less hæmorrhage.

2. SUCCESSFUL AMPUTATION FOR TRAUMATIC GANGRENE.

Aug. 31, 1837.—The patient was a youth 17 years of age, of good constitution, but probably at the time of the injury, somewhat under the influence of malaria, as he came from a sickly district on the eartern shore of Maryland. Being on board a bay craft he suffered a fracture of the leg near the knee, by the fall of a bag of merchandize which was being removed from the vessel.

Dr. Smith saw him on the fifth day from that of the injury. The limb was then reposing on pillows, in the semiflexed position, not having been placed in splints. The whole foot and leg, to within three inches of the knee, were in a state of complete mortification, the parts being tumid, crepitous when pressed, covered with dark vesications, cold and completely insensible. A belt of gangrenous inflammation existed below the knee; but nothing like a line of demarcation existed between the dead and living parts. There was considerable tumefaction at the place of fracture; but the action above the knee was neither excessive nor unhealthy. His pulse was firm and good, (about 100), the nervous system but little disturbed, and the stomach performing its offices as well as in ordinary cases of fracture.

The consultants came to the conclusion that the mortification must have resulted from some local cause; probably some lesion inflicted upon the great vessels and nerve, and they determined to amputate above the fracture. In less than two hours, Dr. S. performed the operation, and the boy recovered rapidly.

The fracture was within about two inches and a quarter of the extremity of the bone, and perfectly transverse. The upper fragment was thrust into the ham, and lodged directly behind the lower fragment, which it overlapped for about three-fourths of an inch. In the midst of effused blood and serum were found the femoral artery and vein thrust backward, and tensely drawn across the sharp posterior margin of the superior fragment, in such a manner that it was perfectly obvious that the circulation in both vessels must have been completely interrupted.

Of course, in such a case, the chances of success from an operation are much greater than in an ordinary instance of traumatic gangrene.

MASSACHUSETTS GENERAL HOSPITAL.

CASES OF PNEUMO-THORAX, AND EXPERIMENTS TO DETERMINE THE CAUSES OF "METALLIC TINKLING." By J. BIGELOW, M,D.*

Dr. Bigelow relates three cases of pneumo-thorax, and has instituted six experiments, for the purpose of determining the vexata quæstio—the cause of the the "metallic tinkling." It is not necessary to enter on the cases, but we shall present our readers with Dr. Bigelow's account of the experiments, and his conclusions.

Experiment 1.—Previously to the autopsies of the patients who were the subjects of Cases 1 and 2, a glass cylinder, open at both ends, was pressed into close contact with the chest, so as to hold water. Some ounces of that fluid were poured in, and a perforation was made through it, into the cavity of the chest on the distended side. Immediately a large volume of air escaped from the chest,

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* American Journ. of Med. Sciences, Nov. 1838.

bubbling upwards through the water. In the third case, no cylinder being at hand, a superficial cavity was made out of the dissected integuments of the chest, and filled with water. Through this water a perforation of the chest, was made on the left anterior surface. The air rushed out, producing strong ebullition, as in the former cases. The experiment was then repeated on the right side, and the perforation made through water as before. No air in this instance escaped, but the water was immediately sucked into the chest by the atmospheric pressure.

Experiment 2.—Artificial respiration was produced in the body of the subject of Case 2, by inflating the lungs through the trachea, and expelling the air by pressure on the abdomen. At each inflation, a most distinct, clear and abundant metallic tinkling was produced, accompanied with more or less amphoric sound, and could be sustained ad libitum by repeating the inflation.

Experiment 3.—Through an aperture in the anterior part of the chest in the subject of Case 2, a catheter was introduced and air blown through it into the cavity of the left pleura. While the end of the catheter was above the level of the fluid, a strong amphoric buzzing was communicated to the ear of an observer in contact with the chest. But when the end of the instrument was pushed below the surface of the liquid, and the latter made to bubble by continuing the inflation, an exquisite metallic tinkling was heard at the explosion of each bubble, resembling, as it had done in life, the sound of a little bell or musical wire. In the subject of Case 3, this experiment was repeated, and varied by pouring into the chest different quantities of water. When a few ounces were only present, metallic tinkling was uniformly produced, but when two quarts or more were introduced, a bubbling only was heard, without metallic resonance. Similar results were also obtained by pouring a small stream, or letting fall drops of water from above, upon the liquid in the chest.

Experiment 4.—Succussion and percussion were both found to produce the same metallic sounds in the dead body as during life in Case 2. Metallic sounds elicited by percussion somewhat resemble those occasionally yielded by the heart, and, as has been observed by Bouillaud, these may be imitated by percussing the back of the hand pressed closely upon the ear, or by closing both ears with the palms of the hands, and walking on a carpet in a still room.

Experiment 5.—In the body of a person recently dead from accident, having no pneumothorax, a repetition was made of several of the foregoing trials. Air and water were forced into the chest, the former so as to distend the cavity and render percussion quite resonant, Ebullition of the fluid was then produced by blowing through a tube inserted between the ribs and pushed below the surface. The only result was a bubbling noise, having not the slightest metallic character. It will be observed that this was nearly a repetition of Magendie's experiment, and it probably failed to produce metallic sound for the same reason as in that case, viz. that the patient was not pneumothoracic.

Experiment 6.—A bladder, and afterwards a stomach, each containing a few ounces of water, were inflated until thoroughly distended. Whenever the inflating tube was pushed below the surface of the liquid, and the inflation continued so as to produce bubbles, a sharp tinkling was heard upon the explosion of every bubble, by the ear applied as in ascultating to the outside of the bladder. In this experiment the sound becomes more exquisitely metallic, in proportion as the tension of the bladder is increased by farther inflation. Succussion of the bladder produces a similar effect. It is necessary that a recent bladder should be used, the texture and elasticity of which are not altered by

drying. When the orifice of the tube is above the surface of the water, also when no water is present in the bladder, an intense amphoric sound is produced during inflation; and if saliva or other liquid, in small quantities, is blown through the inflating tube, a more feeble, or *sub-metallic* tinkling is produced.

From these experiments, and from the cases to which they are pendants, Dr. Bigelow concludes that the following agencies are concerned in producing metallic sounds of the chest.

1. "There must be a cavity, the walls of which are preternaturally susceptible of vibration. This takes place when the pleura is pathologically distended, so as to overcome the obtuse or muffling effect of the contiguous soft organs, such as the lung, diaphragm and intercostal muscles. Some time is probably necessary to prepare the parts for this pathological resonance, since it fails to appear *post-mortem* in healthy chests submitted to experiment. It should be added that when metallic sounds appear in simple phthisis, there are cavities of the lungs, the walls of which are in a state of tubercular induration.

2. The immediate or exciting cause of metallic tinkling, is a forcible or sudden disturbance of the liquid in a vibrating cavity like that described. The explosion of bubbles of air from beneath the surface of the liquid, appears to be the most common cause of such a disturbance; but it may also take place when a part of the liquid is thrown upward in the act of coughing and falls back upon the remainder. The same occurs in succussion of the chest.

3. The vibrations which yield metallic tinkling are transmitted from the liquid to the solid parietes, and thence directly to the ear, without any necessary agency of an echo, or a reverberation of air in the cavity. This is shown particularly by the experiment of the bowl.

4. A minor, or *submetallic* tinkling, having no musical resonance, may be produced by slight impulses given to the air in the cavity, such as the breaking of bubbles of mucus at orifices above the surface of the liquid.

5. Amphoric resonance is produced by reverberations of the air in a vibrating cavity, without sonific impulse of the liquid. The same is true of metallic modifications of the voice, and of the cough when there is no tinkling. Metallic percussion seems also to depend upon the vibrations of air independently of liquid, and may be produced in some other cases when we strike upon a tense cavity in which a certain quantity of air is confined."

CLINICAL REPORTS FROM THE PENNSYLVANIA HOSPITAL.*

I.—DISLOCATION OF THE HUMERUS, REDUCED AT THE END OF TWENTY-ONE DAYS.

Eliz. B. a servant, aged 22, had laboured under an unreduced dislocation into the axilla for twenty-one days, when reduction was effected in the hospital by Dr. Norris. The following, not unusual, method was pursued.

The patient having taken a grain and a half of tartar-emetic, in divided doses, Dr. Norris proceeded at once to the reduction. A folded sheet was firmly applied by wet rollers to the arm, just above the elbow, to effect extension with the use of the pullies; another sheet was passed around the chest, and secured to a staple, for counter-extension; and in order firmly to fix the scapula, a third band was applied over the acromion process, and given to assistants, who were directed to apply their force in a line obliquely downwards towards the opposite

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* Medical Examiner, Philadelphia.

side. The apparatus being adjusted, a vein was opened, and extension kept up by two assistants, for the space of about fifteen minutes, at the end of which time all extension being suddenly removed, the bone was found to be reduced.

II.—DISLOCATION OF THE HEAD OF THE RADIUS BACKWARDS, REDUCED.

'Mr. John B. W——, clerk, aged, 23 years, whilst riding in the city, on the afternoon of the 12th of May, accidentally fell from his horse and dislocated the left radius backwards. He stated 'that he fell on his left hand whilst it was turned inwards, and immediately felt a sharp pain in the elbow, which induced him to think he had broken his arm.' He came at once to the hospital; the arm was semiflexed; he was unable to supinate the hand, or to bend the elbow or straighten it, without intense pain. The head of the radius was distinctly felt behind the external condyle of the humerus, resting against the olecranon process. On partially pronating and supinating the hand, the head revolved distinctly, and owing to the little swelling, and the slight development of his muscles, the button shape of the radius was distinctly seen revolving against the olecranon. The patient, to use his own expression, had always been very 'loose-jointed,' but had never before dislocated any of his bones. After a close examination of the case, he was placed on a bed; an assistant was directed to seize the humerus near the condyles, place his thumbs against the head of the bone, and force it downwards and forwards. At the same time, I made extension at the wrist, suddenly straightened the arm, and supinated the hand, when the bone readily slipped into its place. The arm was then placed in a carved angular splint, loosely bandaged, and cold lotions applied to it. The next day, the patient could bend the arm, and perform the usual motions of the hand, but, of course, was not allowed to do so. Little inflammation followed, and on the 14th of May, still wearing the splint, he returned to Mullaga Hill, N. J. where he resided.

Our readers are aware that this accident is exceedingly uncommon. The reduction appears to have been effected with precision and dexterity.

III.—THREE CASES OF COMPOUND FRACTURE OF THE CRANIUM.

Our Surgical readers are aware that some difference of opinion exists on the treatment of "compound fracture with depression of the cranium." While Sir A. Cooper, Sir B. Brodie, and some other surgeons, recommend trephining as a rule in this accident; others, for example, Mr. S. Cooper, do not acquiesce in the general principle on which that advice is founded. We notice the following cases in order to add them to the recorded facts, which form the best data for generalization.

Case 1. Joseph W——, æt. 10 years, was struck on the head by a large block of wood, which fell from a three story dwelling, on the 10th August, 1837. On his entrance, three hours afterwards, he had a wound of three and a half inches in the sclap, bone bare of periosteum for two inches, fractured the length of the cut, and depressed about an eighth of an inch. Patient insensible; pulse strong, corded and slow; pupils dilated, extremities cold. He was trephined immediately by Dr. Norris. On raising the bone consciousness instantly returned. The middle artery of the dura mater was cut by the trephine, but the hæmorrhage was checked by a coagulum, which soon formed. The scalp was drawn partially together by adhesive strips, and the wound poulticed—ordered perfect rest in a dark room, and lowest diet. Evening.—Pulse increased, skin hot and dry—lies quiet, and complains little; ordered V. S. ad ʒvi, and mist. sal. ʒvi. ant. tart. gr. ss., a table-spoonful every two hours.

On the 31st, there was considerable fever. *V.S. ad* ʒx.—*Hyd. Sub. gr.* ij. *4tis horis.*

This removed the febrile excitement. The wound suppurated, granulated, *threatened* fungus cerebri, (compresses of lint soaked in lime-water prevented its occurrence), several pieces of bone came away, and on Nov. 5, the patient was discharged cured, the wound having firmly healed and the intellects being unimpaired.

Case 2. This case was too severe, and the issue too rapidly fatal, to admit of conclusions respecting the value of modes of treatment. The injury happened from a man falling head-foremost against a large circular saw, which was revolving 240 times in the minute. A fur cap on his head was torn to tatters, the scalp terribly lacerated, and turned back, leaving the skull bare for a space of four inches long by three wide; the skull was fractured from the lower part of the os frontis to the vertex, in a line a little oblique to the sagittal suture. The saw had penetrated the dura mater, a process of which was hanging out, and entered deeply into the substance of the brain. The patient was sensible, and could sit up in bed. But he became delirious in the night, comatose next day, and died within forty-eight hours after the injury.

Among other lesions, there were—the arachnoid much inflamed and thickened; several drachms of pure pus found on the brain and membranes; vessels injected; brain very soft around the wound; wound in the anterior lobe of left hemisphere of cerebrum, two and a half inches long, and near two inches deep; brain covered with pus, and much softened on that side.

The early occurrence of suppuration is sufficiently striking to induce us to give this brief account of the case.

Case 3, was one of pistol-ball lodged in the brain, which proved fatal on the third day, with such symptoms as might naturally be expected to occur. It is not, we think, necessary to detail the case.

The only instance of the three which bears upon the question of trephining, in cases of compound fracture of the cranium with depression, is the first. In that it will be observed that suppuration occurred, and it is fair to suppose that had the bone not been raised and removed by the trephine, the collection of pus might have produced unpleasant consequences.

IV.—MORTALITY AFTER AMPUTATIONS, IN THE PENNSYLVANIA HOSPITAL.

Dr. Norris one of the surgeons of the hospital, has made a report on this subject. He says:—

"Contrary to the opinion generally prevalent in this country, amputation, even under favourable circumstances, is frequently followed by fatal results in civil hospitals. In the practice of the Hôtel Dieu, of Paris, it is said that not more than half of the cases prove successful; and I have the authority of M. Hache, a former interne of the hospital of St. Louis, of the same city, for stating, that out of twenty successive amputations made in the year 1833, in that institution, twelve died.

After a tabular view of the operations performed in the Pennsylvania Hospital, for the last seven years, Dr. N. observes:

"Of the above 56 amputations on 55 patients, 24 were primary, of which 14 were cured, and 10 died; 4 of the deaths occurring within the 24 hours immediately following it; 12 were secondary, of which 5 were cured and 7 died; 20* were for the cure of chronic affections, of which 15 were cured, and 4 died;

* One of the patients here included suffered double amputation.

23 of the amputations were of the upper extremity, of which 18 were cured and 5 died; 33 were of the lower extremity, of which 17 were cured, and 16 died; 6 were amputations at the joints, of which 4 were cured, and 2 died.

Of the 55 patients operated on,

9 were under 20 years of age, of whom 8 were cured and 1 died.
21 between 20 and 30—15 were cured, and 6 died.
16 between 30 and 40, 9 " 7 "
9 between 40 and 50, 3 " 6 "

From this resumé of seven years' practice at the Pennsylvania Hospital, it appears,

1st. That amputation is to be regarded as an operation attended with much danger to the life of the individual.

2d. That the chances of success after it, are much greater in persons who have been for some time suffering from chronic diseases, than in those who have it done whilst enjoying robust health.

3d. That amputation of the lower extremity is much more fatal than that of the superior member, and

4th. That the danger increases with the age of the individual operated on."

We may here introduce some statistical observations by Mr. Benjamin Phillips, read before the Medico-Chirurgical Society, in November, 1837, and published in the Medical Gazette for June, 1838. To these observations our contemporary, the Examiner, alludes, and we quote from his quotations.

"I have now shown that the mortality succeeding to amputation is very great—23 per cent. I shall therefore proceed to analyse the gross number, and exhibit the proportion furnished by the different countries implicated in the inquiry. They are as follow:

	Cases.	Deaths.	Per Cent.
France	203	47	or $23\frac{3}{2}\frac{1}{0}\frac{1}{3}$
Germany	109	26	$23\frac{9}{1}\frac{3}{0}\frac{3}{9}$
America	95	24	$25\frac{5}{1}\frac{}{9}$
Great Britain	233	53	$22\frac{1}{2}\frac{7}{3}\frac{4}{3}$
	640	150	$37\frac{7}{1}\frac{}{6}$

Here is an average number of deaths, amounting to, as near as may be $23\frac{1}{2}$ per cent. If the several countries be taken separately, we find that France is a fraction below this average; that Germany differs only to the amount of a fraction from France; that America only exceeds the average by a little more than 2 per cent.; and that Great Britain is a fraction below the average."

The main object of Mr. Phillips is to shew that the mortality after amputation is much greater than is usually believed.

Mr. Phillips justly observes, that if compared with the much dreaded operation of lithotomy, amputation is much more fatal.

Mr. Phillips thinks it proved that there is a large class of cases, in which union by the first intention is attended with more danger, than when suppuration is permitted. This class comprises diseased articulations.

"Of these cases, immediate union was attempted in 117; consecutive union in 96.

Of the 117 cases, 88 only succeeded; the deaths amounted to 29.

Of the 96 cases, in which the treatment was by consecutive union, 76 succeeded; the deaths were 20.

On these cases, Great Britain furnished 86; the other countries included in the observations, 127.

Of the 86 cases, immediate union was attempted in 60; consecutive in 26, and with the following result: of the 60 cases there were 15 deaths; of the 26 there were 5 deaths.

Of the 127 cases, immediate union was attempted in 57 cases; consecutive in 70.

Of the 57 cases, 14 were unsuccessful, the patients died, and 43 succeeded. Of the 70 cases where consecutive union was employed, there were 15 deaths. The results, therefore, attendant upon the practice of immediate union, are a mortality amounting to 25 per cent.; upon consecutive union, of nearly 21 per cent.

And there is a singular uniformity attendant upon the results of these two modes of practice, as shown by the returns furnished by our own and the other countries; and all are strongly confirmatory of the prudence of avoiding immediate union in this large and well-defined class of diseases."

STATISTICAL REPORT OF THE RICHMOND LUNATIC ASYLUM. By JOHN MOLLAN, M.D. Physician Extraordinary to the Asylum. Octavo, stitched. Dublin, 1838.

The attention of the profession scarcely requires to be directed to insanity. Yet there are many points connected with it, which are understood imperfectly, and so much hinges on a sound acquaintance with its phenomena and management, that medical men cannot study them too closely.

The present report is far from uninteresting. Our brethren in Ireland are beginning to exhibit a degree of zeal and activity which bode the best results to science. The officers of charitable institutions are particularly zealous.

It appears that the Richmond Lunatic Asylum was completed in the year 1814. It was planned not simply for the safe-keeping of the insane, but with a view to their rational treatment and cure.

For many years after its opening, patients were admitted into the Richmond Asylum from all parts of Ireland; but since the year 1830, when the various District Asylums were completed, it has been appropriated to a certain district, which embraces the city and county of Dublin, the counties of Meath, Louth, and Wicklow, and the town of Drogheda. A residence of twelve months within the district is necessary to entitle a patient to be received, and none are admitted without a medical certificate of insanity, and an affidavit on the part of the nearest relative, that the individual is a pauper, by which is understood, not being possessed of sufficient means to pay for maintenance in a private asylum. A few persons have been occasionally admitted, who contributed small sums to the funds of the institution; but the number of such cases at one time in the house, has rarely amounted to eight; and it is right to state, that they are treated in every respect like the general class of patients.

Cases of a manifestly incurable character are not admissible, but this rule can never be strictly enforced. Persons subject to epilepsy are excluded by the same regulation, but they sometimes get admission from the existence of the disease being concealed.

The plan of the building admits the formation of five classes for each sex, and a separate airing-ground is appropriated to each division. An important addition has lately been made of a large piece of ground, and including the gardens originally attached, there are now nearly twenty English acres belonging to the asylum.

The house was planned originally for the reception of 236 patients, but by alterations subsequently made, 288 can now be admitted; and yet, owing to the accumulation of incurable cases during a series of years, the accommodation is found to be inadequate to meet the wants of the district, and the Asylum labours under the disadvantage of not being at all times able to receive patients immediately on their being attacked, a circumstance which has an important effect

on the result of treatment. But this defect is likely to be soon removed, Government having sanctioned the addition to the building of accomodation for 100 patients.

Dr. M.'s Report embraces a period of five years, commencing January, 1833, and ending December, 1837.

The population of the district, according to the census of 1831, amounted to 803,396, and each county being charged with the expense of the patients received from it, Dr. M. is enabled to compare the numbers with the population of each division respectively.

Admitted from	Population.	Number of patients.	
		Males.	Females.
City of Dublin (Within the ancient boundaries.)	204,155	167	128
County of Dublin	176,012	68	80
County Meath	176,826	40	25
County Wicklow	121,557	25	23
County Louth	107,481	27	19
Town of Drogheda	17,365	4	2
	Total,	331	277

The large number of patients admitted from the city and county of Dublin, as compared with the other divisions, shews the much greater prevalence of the causes of insanity in cities and thickly populated neighbourhoods, than in the rural parts of the district. The town of Drogheda is rather an exception to this rule.

The medical certificate required with each patient contains a query as to the probable cause of the disease, where such could be assigned. From this source Dr. M. has arranged a table of causes.

	M.	F.		M.	F.
Intemperance and abuse of ardent spirits	74	12	Grief from death of relatives,	11	18
Pecuniary losses and reverses of fortune	35	20	After fever	10	8
External injuries from falls, wounds, &c.	18	4	cholera	1	1
Destitution and want of employment	13	10	influenza	1	0
Domestic disagreements and bad treatment by relatives	9	10	scarlatina	0	1
Love and disappointed affections	5	18	erysipelas	0	1
Jealousy	10	10	Apoplexy	2	0
Seduction	0	1	Dread of cholera	0	1
Religion	10	18	Abuse of mercury	10	2
Pride	1	1	Fright	4	26
Excessive fondness for music,	1	0	Hereditary predisposition	8	5
			Close confinement and study,	7	0
			Political excitement	1	0
			Puerperal state	0	22
			Violation of the person	0	3
			Change of life consequent on marriage	0	1

"This table shews a greater proportion of physical causes amongst men, and of moral causes amongst women, not exclusive of those peculiar to the

latter sex. Besides the large number of cases attributed to intemperance, I have no doubt that the same cause operated remotely in many others, by leading to those circumstances from which the disease was supposed more immediately to proceed. Of the cases denominated religious, I believe but a very small number could fairly be attributed to religion as a cause; religious enthusiasm and religious despondency, though often mistaken for the causes, are much more frequently the consequences of insanity. The puerperal cases occurred either during pregnancy or very soon after delivery; in some few of them, other causes may have been combined with the puerperal state, such as fright and family disagreements. One woman who was attacked immediately after the birth of her first child, had been insane before marriage. In addition to those cases stated as hereditary, wherein this was the only cause assigned, nineteen others were noted, one or other of whose parents had been insane; and in forty-four more, insanity had shewn itself in collateral blood relations. Amongst the cases for which no satisfactory cause was assigned in their certificates were two young females, aged sixteen years, in whom the catamenia first appeared after being admitted into the asylum and they speedily recovered on the establishment of this discharge. One was readmitted at the end of eight months, and the other after an interval of more than three years, both being affected with suspension of the catamenia. Suitable means being employed for the restoration of this evacuation, every symptom of insanity soon disappeared. In many other cases, irregularities of the menstrual function existed; in some, perhaps, the consequences, in others, very probably, the cause of their insanity; but in none was the connexion of the two affections so strikingly exhibited as in the two first mentioned."

Dr. Mollan earnestly and properly presses on those gentlemen who sign certificates of insanity, the necessity for accuracy in filling up answers to the queries they contain. Those answers are to form the basis for generalizations. How requisite their truth must be.

The occupation or condition in life of each patient is shewn in the table following.

MALES.		FEMALES.	
Clergymen	3	Governesses	4
Apothecaries	2	Schoolmistresses	3
Attorneys	1	Shopkeepers and small traders	22
Traders and shopkeepers	23	Dressmakers and other female trades	45
Schoolmasters	5	Domestic servants	69
Mercantile and law clerks	27	Washerwomen	5
Artisans and tradesmen	132	Wives or daughters of tradesmen,	53
Servants	32	Do. of professional men	5
Farmers	11	Do. of farmers	11
Soldiers and pensioners	9	Do. of labourers	41
Sailors	9	Do. of clerks or stewards	9
Police and revenue officers	6	Mendicant	1
Labourers	60	Midwife	1
Mendicant	1	Prostitutes	3
Unknown	10	Unknown	5

The class of labourers, the lowest, most numerous, and most likely to furnish tenants to a pauper asylum, only gives a fourth of the cases. Insanity prevails more in the middle and upper, than in the lower classes.

"In my inquiries respecting the condition in life of the females, I was surprized to find so small a number of prostitutes, as the contrary might be expected, on considering the excesses to which they are addicted, and the moral and physical evils to which they are exposed. Only three have been admitted

within the last five years; and I learn that the average number in former periods was not greater. It is right to anticipate an objection that may be made, by stating, that women of this class, when proper subjects for the asylum, find as ready admission as any others. I should not have alluded to this circumstance, but that it is at variance with reports of lunatic asylums elsewhere, particularly in Paris. It has been stated by Esquirol, that at the Salpêtrière, the great hospital for insane females, one-twentieth of the whole number had been prostitutes. And Parent Duchatelet, in his extraordinary work on prostitution in the city of Paris, states that 106 cases of insanity had occurred amongst prostitutes in the course of five years. Why women of this description in Dublin should be more exempt, I can assign no satisfactory reason. The peculiar manners and habits of the same class in the French capital, as described by Parent Duchatelet, will probably account, in some degree, for their greater liability."

Of the men, 126 were married, twelve were widowers, and 134 were unmarried. Ninety-eight of the females were married, twenty were widows, and 115 were unmarried. The state of the remainder was not ascertained.

"An account being kept of the religion of the patients; of the 608 under consideration, 146 were Protestants, and 462 Roman Catholics, being in the proportion of one of the former in every 4 1-6th; which is greater than that of the respective numbers in the population at large, wherein, according to the census, Protestants constitute one in every 5¼. But as all classes are included in this calculation, a fairer comparison would be of the patients in the asylum with the admissions into a general hospital indiscriminately open to the lower classes. I have, accordingly, procured returns from two of the hospitals connected with the house of Industry, of the patients admitted in one year, and I find the Protestants to have been one in every seven. I am, therefore, warranted in saying, that relatively to the respective numbers in the population, there are more insane Protestants than Catholics. This difference I conceive to have very little connexion with religious belief, but is mainly, if not entirely attributable to the fact, that the great disparity in the numbers of Protestants and Catholics in this country exists in the lowest classes of society, and that in ascending the scale, the numbers approximate; and as it has already been stated, insanity is least prevalent in the lowest classes. It is not meant by these observations altogether to exclude religion as a cause of insanity; and perhaps cases of a purely religious origin may be more common amongst Protestants, than Catholics; they are, however, only of rare occurrence."

TABLE OF AGES.

	Under 20 years.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	Above 70.
Males....	17	85	106	75	29	16	3
Females.	20	65	86	42	28	10	6
Total.....	37	170	192	117	57	26	9

487 were admitted in the first attack, seventy-eight in the second, twenty-four in the third, fourteen in the fourth, four in the fifth, and one in the sixth attack of insanity.

The duration of the disease before admission is shewn in the next table.

	ADMITTED IN THE MONTH.										IN THE YEAR.				
	1st.	2nd	3rd	4th	5th	6th	7th	8th	9th	10th to 12th.	2nd	3rd	4th	5th	6th
Males...	78	69	33	30	20	10	17	5	7	9	17	15	12	3	6
Females	50	47	32	28	12	7	13	5	4	12	24	17	9	6	11
Total ...	128	116	65	58	32	17	30	10	11	21	41	32	21	9	17

It has sometimes occurred that a delay in the admission arose from the want of sufficient accommodation in the asylum; much more frequently, however, from neglect of timely application. The friends of patients often dislike their being placed in an asylum so long as they are manageable at home, and in consequence, that period of the disease is too frequently allowed to pass over when proper medical treatment is most likely to be efficacious.

The results of treatment are next adverted to.

	DISMISSED.				
	Recovered.	Relieved.	Unrelieved.	Died.	Remaining.
Males - -	150	29	10	57	85
Females -	116	44	3	31	83
Total - -	266	73	13	88	168

From the recoveries, forty-two must be deducted on account of re-admissions in consequence of relapses; thus reducing the number of permanent recoveries to 224, so far as the event is known. But on the other hand, credit is to be taken for at least one half of those discharged as relieved, who are known ultimately to have recovered; the removal of a patient from the asylum who is tranquil and easily managed, having often a salutary effect. Again, of those remaining, a very considerable number are likely to recover, which circumstance must be considered in forming any calculation of the curability of the disease.

Dr. Mollan adverts to the pathology of insanity, but so cursorily that we do not think it necessary to notice this part of his report. We may simply observe, that many more males died from head-affections than females, a circumstance corroborative of the greater prevalence of the physical causes of insanity in the former.

The tendency of insanity to shorten life is a subject of importance, were it only in reference to life-assurance. Dr. Mollan subjoins the ages at which death occurred, as a contribution to the stock of data.

DIED.

Between 20 and 25 years.	25 and 30	30 and 35	35 and 40	40 and 45	45 and 50	50 and 55	55 and 60	60 and 65	65 and 70	70 and 75	85
3	9	11	14	10	9	7	7	9	3	5	1

In our last notice of the work of Esquirol, we gave at full length the results of his observations on the value of laborious employment in the treatment of insanity. The following observations so strongly confirm the opinions and statements of that distinguished physician, that we give them at full length. The subject is one of the first importance.

"The advantages of laborious employment in the treatment of insanity have long been known, but its systematic adoption in public asylums is of recent date. I have already mentioned the extent of ground attached to the asylum; the part of this lately acquired, is now being converted into a market garden for the growth of vegetables for sale. An average number of sixty men are constantly employed in the cultivation of the grounds; and although entrusted with the use of spades, shovels, and other implements, no serious accidents have ever occurred. They are of course at all times under proper superintendance. About fifteen men find employment in various trades, as weavers, tailors, shoemakers, and carpenters. A few are occasionally engaged in breaking stones, and making mats, others in the performance of various domestic offices in the house The female occupations consist of spinning, knitting, and the various branches of needle-work, and they assist in washing, and in all the offices of house-maids All the clothing for both males and females is made up by the patients, with the exception of hats and shoes. During the last year, 2088 yards of linen and calico were woven in the establishment, the yarn for the linen having been spun by the females, and 524 pairs of stockings were made by them. Small rewards are generally given for the articles manufactured, which here as elsewhere operate powerfully as a stimulus to exertion. Of the advantages of this system of employment, I can speak in very decided terms; persons who, when unemployed, are noisy, violent in their demeanor, quarrelsome, and discontented, very generally become, under the influence of suitable occupation, tranquil, orderly, and easily managed; and to its salutary effects I mainly attribute the recovery of numerous cases, some of which were at first most unpromising. Difficulties will no doubt occur in its individual application, requiring perseverance and address, and of course, it is not suitable to every case, nor to every stage of the disease; but I can confidently say, that at least eight out of every ten lunatics will be found in a fit state for some useful pursuit; and it is often a subject of regret that our means of employment are inadequate. The advantages, in an economical point of view, of employing the patients in a pauper establishment, are so obvious as to require no comment.

I shall give a brief sketch of a few cases in illustration of these observations. A farmer about twenty-seven years of age was admitted into the asylum, after having been nearly four years in a state of dementia, in consequence, as was reported, of the improper use of mercury. He was listless and taciturn, and would only reply to questions about himself, by telling his name and place of abode; his general health was unimpaired, and his appetite was good, but before commencing his meals he always required the assurance of some of the attendants that the food was good, and proper for him to eat. At first, he refused to engage in any occupation, but being otherwise amenable, and shewing no vicious propensity, a wheel-barrow was placed before him, and a man at

either side took him each by a hand, and fixing them on the handles of the barrow, he was gently urged to the use of it; finding this plan persevered in, he soon consented to work by himself; and afterwards taking to the use of the spade he proved himself an excellent workman. In a short time an improvement was apparent in his mental state, he became gradually more intelligent and communicative; his recovery proceeded without interruption, and he was discharged quite well after a residence of eleven months in the asylum.—A tailor, aged thirty-six years, was admitted in a state of melancholy of six months' duration; he was remarkably timid and reserved, and when questioned about himself he seemed disposed to give the required information, but his sentences were always unfinished from failure of memory, and want of words to express himself; his general health was impaired, and his appetite poor. After having been for some time under medical treatment, it was determined to try if he could be induced to work at his business, another tailor being constantly employed in the same division with him. Some difficulty occurred in persuading him to make the effort; but by encouraging language, and holding out the hope to him that he should be enlarged as soon as he shewed that he was able to resume his trade, he was led to begin. At first his progress was slow, and frequently interrupted by fits of abstraction: but he gradually became more collected, and capable of longer continued application, and by steady perseverance in this course he recovered perfectly, and was discharged nine months after his admission.—A man, aged twenty-eight, who had served for some years in the East India Company's Artillery, was invalided in the island of St. Helena, and discharged as unfit for service in consequence of insanity, which had commenced with delirium tremens. He was admitted into the asylum about twelve months after being first attacked, when he was incapable of giving any correct account of himself; he was melancholic, and in general silent; when he did speak, his conversation was an incoherent jumble of the recollection of past events; his general health was a good deal impaired. For nearly three months after his admission there was very little change in his situation, he then began to shew more intelligence, and to take more notice of what was passing around him. It was discovered that he had been accustomed to the care of horses, and was fond of them; advantage was taken of this circumstance, and he was employed about the manager's horse, which in a short time was entrusted entirely to his care. From this period he steadily improved and his recovery was complete in twelve months from the time of his admission. After being discharged as a patient, this man was employed as a keeper in the asylum; the duties of which situation he has now performed in a very satisfactory manner for the last two years. I may here mention, that one of the best nurses at present in the establishment is a woman who first entered it as a patient many years ago, and was then in a state of violent excitement.

The example of others employed around them greatly assists in overcoming the disinclination to every kind of exertion which many patients evince; and although the results of employment will not be always as satisfactory as in the examples I have adduced, still in every case more or less advantage will be derived from it. The general health is promoted, discipline is maintained, and active exertion in the open air is found more advantageous in producing quiet sleep than opiates. Many of our most industrious patients are persons whose cases are likely to prove incurable, but who are made as happy as their several states admit of; some, by their labours, are fully requiting, others materially lessening, the expense of their maintenance to the public."

TWENTIETH REPORT OF THE DIRECTOR OF THE WEST RIDING OF YORK PAUPER LUNATIC ASYLUM.

We have lately devoted some space to the consideration of insanity, and of the questions that hang by it. The utility of a periodical journal of medicine consists, we imagine, in bringing important subjects prominently, and in succession, before the public eye, and in directing particular attention to the main practical points connected with them. We would fain believe that by pursuing such a plan, we are contributing, and not meanly, to the diffusion of science, if not to the advancement of it.

The Report before us, brief at the best, is peculiarly so in reference to the medical history and management of insanity. But we are vaguely promised, at some future period, the information we may reasonably ask for.

The number of patients in the house appears to range between 317 and 366. The average number during the year was 346. Of these, rather more than one half were males. All cases of insanity, favourable or unfavourable, are admitted, a circumstance that must tell, of course, on the mortality.

Statement of the Admissions, Discharges, and Deaths of all the Patients in the Asylum, since its Opening, on the 23rd of November, 1818.

Patients admitted within three months after the first attack	788	Patients discharged cured, who had not been insane more than three months before admission	424	
Patients admitted within twelve months after the first attack	457	Dead	188	
Patients admitted who had been insane from one to thirty years..	584	Patients discharged cured, who had not been insane more than twelve months before admission	246	
Patients admitted who have had previous attacks, and have been confined before in this Asylum	346	Dead	168	
Patients admitted who are stated to have had previous attacks, but who have not been confined here	405	Patients discharged cured, who had been insane from one to many years before admission,	62	
		Dead	296	
2580		Patients discharged cured, who have had previous attacks.. ..	392	
		Dead	156	
		Patients not cured, discharged by desire of their friends, and others by order of the Magistrates	282	
			808	1406

We think the following Table of Re-admissions both curious and likely to be profitable. Some perhaps may feel surprise at the preponderating number of re-admissions, after a considerable period.

Statement of Patients re-admitted.

	MALES.	FEMALES.
Patients re-admitted who had not been discharged three months	23	22
Patients re-admitted who had been discharged between three and six months.	23	17
Patients re-admitted who had been discharged between six and nine months	9	16
Patients re-admitted who had been discharged between nine and twelve months	15	13
Patients re-admitted who had been discharged between one and two years	34	27
Patients re-admitted who had been discharged between two and three years	17	25
Patients re-admitted who had been discharged between three and ten years	52	45
Total	173	165

Of 183 admitted in 1838, 45 are the subjects of insanity, the result of intemperance; 38 with propensity to suicide, having made actual attempts on their lives; 16 are epileptic, and 8 idiots from birth.

There are one or two points on which we shall touch.

1. *Bad Effects of great Reduction in Mania.* "It is satisfactory to find, that notwithstanding the great increase in the number of patients, (the average throughout the year being 346,) the mortality has diminished. Thirty-seven have died, some within a short period of admission. Amongst this number was a patient who had been insane seven days before being sent here; he had been bled from the arm three times, to syncope; the quantity abstracted was 96oz. in less than four days; from this, and 'severe purgation.' the system was so reduced, that the patient, as may be expected, never rallied. Another was received in a sinking state, with the hands and arms enormously swollen, of a blackish colour, approaching to mortification, and a deep indentation in the upper arm, produced by a cart-rope which had been used for the purpose of binding him down in bed; he had been highly excited, but on his admission all restraint was removed; he became calm, answered every question rationally, and continued in that state up to the period of his death, which took place in twelve hours."

2. *Sketch of the Economy of the Asylum.* The patients are all paupers, their respective parishes paying for each 6s. per week. This sum defrays every expense. They are fed, lodged, and clad alike, wearing a dress of grey woollen cloth, which is woven and made up by themselves; they rise at six A.M. in the Summer, and seven in the Winter, and all who are in a fit state, (of whom there are a great number,) attend with such servants as can be spared at morning prayers precisely at eight o'clock. They breakfast on milk pottage and bread at half-past eight. At nine o'clock the gardener, farmer, laundry woman, &c., select those patients, who by previous arrangement with the Director have been fixed on, for their several occupations, and commence work.

At eleven, the workers have a luncheon of bread, and three-quarters of a pint of table-beer. They dine at one. Their dinners are one day, meat, yeast dump-

lings, and potatoes, and half-a-pint of beer; the next, soup, with potatoes and dumplings, alternately.

At two, work is resumed, and at four a luncheon is distributed, similar to that in the forenoon. At seven they have supper, of milk pottage and bread. At eight, the bed-room doors and window shutters are carefully locked, the clothes folded, and placed on the outside of each door. The resident physician, (who is director) the matron, the apothecary, and housekeeper, reside in the Institution. They not only visit each patient once a-day, but are constantly amongst them. The two visiting physicians attend twice a-week each, and more frequently if necessary. The two visiting surgeons once a-week, and as often as there are surgical cases requiring their attendance.

The number of patients employed will be seen from the following table:—

Sewing and knitting	61
Household work	78
Agriculture	45
Shoemakers	5
Weavers	6
Baking and Brewing	4
Joiners, painters, coopers, and Blacksmiths,	7
Washing	18
Picking Coir	74
Total	298

Here, as elsewhere, the utility of labour would appear to have been proved.

MARYLEBONE INFIRMARY.

On Long-Continued Contraction of the Lower Extremities, from an Affection of the Spine. By R. A. Stafford, Esq. Surgeon to the St. Marylebone Infirmary, &c.

We shall allude to some cases detailed by Mr. Stafford, before we notice the views he has founded on them. The cases are five in number.

Case 1.—Jan. 1833.—Mary Kean, æt. 20, a slight-made girl, and of small stature, was admitted into St. Marylebone Infirmary with complete contraction of the right lower extremity, and contraction of the third and little finger of the hand of the same side. She possesses the full power of feeling in both limbs, but the knee-joint is firmly bent and stiff; the calf of the leg rests upon the back part of the thigh; and the heel presses closely upon the nates, the foot being turned backwards. She states that she has been the subject of epileptic fits ever since her infancy; that about two years ago she was seized with violent pain in the spine in the lumbar region; pain in the hip and knee; and extreme pain along the course of the ischiatic nerve, accompanied with considerable tenderness and increased sensibility of the whole limb. At this period the lower limb became gradually and firmly contracted, and no means employed could prevent it. Some little time afterwards the two last fingers also became contracted, and thrown across the two first on the hand of the same side. She was admitted into one of the London hospitals, where the symptoms became mitigated, but the limbs remained the same.

For the last two years, excepting the contraction, she has continued pretty well, but at present she is suffering from her original symptoms. The pain in the back, hip, and knee, is extremely acute; and the tenderness and sensibility of

the whole limb is so great that she cries out at the slightest touch, and she cannot even bear the weight of the bed-clothes upon it. On tracing and pressing upon the ischiatic nerve, it is extremely painful and tender. Her pulse is quick, fever high, tongue furred, skin hot and dry, and thirst great. She has constant restlessness and sleepless nights.

These symptoms continued, being more or less violent, for three or four months; and the treatment adopted was, frequent abstraction of blood from the lumbar region by cupping; the application of leeches along the course of the ischiatic nerve; the exhibition of antimonials, opiates, and aperients, as often as required, and according to the necessity of each remedy. When the chronic stage commenced, counter-irritants were employed and frequently repeated, both on each side of the spine and along the course of the ischiatic, nerve in the form of blisters and the tartar-emetic ointment. Lastly, issues were made and kept open for a considerable time on each side of the spine in the lumbar region.

When the inflammatory symptoms had entirely subsided, the pain in the back had ceased, and the tenderness of the limb had diminished, an attempt was made to unbend the contraction, and bring the limb into its natural state. To effect this purpose small thin pillows were first introduced between the calf of the leg and back part of the thigh, drawing them as near as possible to the flexure of the knee-joint. At first this caused extreme pain, and occasioned several attacks of epilepsy. By degrees, however, the patient was able to bear the treatment. Thicker pillows were then employed, and, as before, occasioned great pain but which, after the limb was accustomed to them, subsided. When the pillows had been worn for some time (six weeks or two months) the contraction has relaxed sufficiently for a machine to be introduced between the two limbs, and which is so contrived that, by turning a screw, the leg can be gradually extended. It consists of two splints joined by a hinge at the flexure of the knee-joint—one resting on the back part of the thigh, and the other on the calf of the leg; a bow made of iron, the extremities of which rest upon each splint, and through the centre of which passes a screw, which is also attached to the angle at the junction of the splints. A nut, (as it is termed) is turned on the screw, and presses on the centre of the bow; consequently when the centre is pressed upon, the two extremities extend the splints.

With this machine the limb was gradually extended inch by inch, until at length the leg and thigh were as straight as natural. During the progress of the extension, friction was employed, and the knee was frequently steamed. The limb was then exercised; and after the period of seventeen months from the beginning of the treatment to the termination of it, the patient was discharged from the hospital cured. The fingers likewise were gradually extended, and returned to their natural use and position.

This case is one of some interest. We have given it in the words of the author, as it is not susceptible of useful abbreviation. The disease on which the contraction of the leg and of the fingers depended, was probably seated in the spine. The existence of epileptic fits from infancy furnishes collateral evidence of lesion of the nervous centres. The affection was probably inflammatory, from the severity and course of the pain, and from the *pyrexia* which attended it. The case is peculiarly instructive, because, to use the words of Mr. Stafford, it shews, that, however firm and complete a contraction of this description may be, yet by perseverance and care, and the gradual and equal employment of extension, the limb can be restored to its healthy action.

We pass over the second case, and pause at the third.

Case 3.—"A young lady, æt. 18, of a strumous habit, fell into bad health. She first found that she had partially lost the power over her legs; she then was seized with violent spasms and involuntary twitchings of the lower extremities.

At length these spasms increased, and became so confirmed that the legs were half drawn up in a semi-flexed position, and would remain so, unless they were put down again by another person. At this period of the complaint the case was considered as chorea, and treated as such. No improvement, however, took place; the spine, therefore was examined, and it was found that five or six vertebræ were diseased, and that there was angular curvature in the dorsal region of the spine, beginning at the fourth dorsal vertebræ. The friends of the patient would not consent to any treatment, consequently the curvature increased, and the contraction of the legs likewise. She remained in this state for a few months, when she came under my care. I found her as above described, and my first object in the treatment was to get the limbs back to their natural position. Leeches were frequently applied to the back, and counter-irritants employed. Under this treatment she improved, some consciousness of feeling in the legs returned, and the contraction became sufficiently relaxed to enable me to place her on one of Mr. Earle's beds; but if the limbs were touched or moved they immediately contracted. After she had been under my care for a twelvemonth, improving in health, and there being some slight amendment both in the power of feeling and of motion in the legs, her friends became extremely impatient at the tediousness of the case; they made an attempt, without my consent, to get her up; employed friction, and exercised the limbs. The spasms returned in a violent degree; they extended on to the arms and all over the body. At length she became comatose, and in this melancholy state died. No examination of the body was made."

Case 4, that of a lad aged 15, is one of angular curvature of the spine, beginning at the fifth dorsal vertebra, and ending at the tenth. He states that about three years ago, when stooping down, a young man in play jumped upon his back and knocked him down. From this time he felt pain in the spine, and the curvature commenced. About two years ago his lower limbs became in one week contracted, and drawn up in a semi-flexed position, so that the heels are within four inches of the nates, and they have remained so ever since. They can be straightened to a certain extent, but immediately they retract as if by a spring with great force. The treatment has been abstraction of blood from the spine and counter-irritants, &c. At length the contraction subsided, the limbs could be straightened, and the boy is now (July 3d) walking about like other people.

Case 5.—In this, dissection was obtained, and the nature of the lesion ascertained with precision. Ann M'Cartney, æt. 41, died in St. Marylebone Infirmary, September 7th, 1838. Nearly three years previous to her death, her lower extremities became firmly contracted, so that the heels almost touched the nates. After this she became insane, and was an inmate in the Lunatic Asylum at Hoxton. On examination of her body the arachnoid membrane of the spinal marrow was thickly studded along its whole course by specks of bony matter, consisting of patches of various sizes. These bony concretions had spiculæ on their surfaces, which, from their roughness, must have been a constant source of irritation, if not inflammation of the spinal cord itself.

Having related these cases, we may now pass to the views engrafted on them. It will probably appear that those views outrun the data.

"In many cases," says Mr. Stafford, "which have been termed Local Hysteria—the symptoms of which Sir Benjamin Brodie has so ably described, in a work lately published by him—I have every reason to believe, if they were traced to their original source, that the medulla spinalis and its membranes would be found to be the seat of the disease. I am induced to come to this conclusion from the symptoms of these affections. For instance, one individual shall wholly or partially lose the sensation of a limb; another shall wholly or partially lose the power of volition; a third shall have a limb contract, as in the cases,

I shall presently mention; and others, again, shall have extreme pain in the hip, the knee, or ankle, accompanied with extreme tenderness and sensibility, and even swelling, and yet have no actual disease of either joints. Some also shall have extreme tenderness of the spine itself; so much so, that they shall flinch even at the slightest touch. Retension of urine, tympanitis, and many other symptoms, shall effect others, and all which appear to me to be alone traceable to the nerves belonging to the parts themselves, or to the grand trunk from whence they spring.

When we reflect on these various affections—loss of sensation—loss of motion —increased sensibility—spasm and contraction of muscles—we are led to inquire how such different phenomena can be produced. It appears to me that the different functions which the brain and medulla have to perform, will explain the whole. First, the medulla spinalis governs the power of feeling in the trunk and limbs; therefore, if feeling be lost, it must necessarily arise from some affection of the cord: secondly, it governs motion; consequently if motion be lost, it has suffered some functional derangement, or morbid alteration of structure; thirdly, if contraction of the limbs takes place, we know that the medulla spinalis governs the action of muscles, and therefore that most probably the affected part is the spine; fourthly, if there be increased sensibility of a limb, as in the cases which I shall presently relate, there can be but little doubt that it is produced from some morbid condition or inflammation of the nerve itself, or of that part of the substance of the medulla which governs sensation, from whence it has its origin: and, fifthly, when contraction and spasm; inflammation of that part of the substance of the cord which governs motion, or at the origin of the nerve which supplies the muscles of the affected part. When we compare these affections with the injuries of the spine, we may observe a great similarity in the symptoms of both. When paraplegia is not complete in concussion of the spine, there may be partial loss of feeling or of motion in the lower limbs. The same occurs in what has been termed local hysteria. A sense of numbness, or partial paralysis, is often complained of by the patient, and I have known individuals thus affected drag one leg from this cause. The same feeling of disordered sensation I have observed takes place in the upper extremities, and which sometimes happens in injuries of the spine without the lower suffering. It is not uncommon, also, in injuries of the spine for the patients to complain, as they do in local hysteria, of severe pain in the hip, the knee, and the ankle. A case of this kind occurred sometime ago in St. Bartholomew's Hospital. A man threw himself from a high wall, having the impression that it was falling. He injured his spine in the lumber region, and partially lost the feeling of one leg, having also retention of urine, and inability of retaining the fæces. When he was admitted into the hospital he referred the chief of his sufferings to severe pain in the hip, the knee, and heel, accompanied with extreme tenderness and sensibility of the whole limb. He was relieved by abstraction of blood from the lumbar region and moxas; but he returned again, after his discharge, three times, suffering from the same symptoms, before he ultimately recovered.

Contraction of the limbs is occcasionally produced from an injury of the spine. An instance of this kind occurred a few years ago at Penkridge, at Staffordshire. A man fell from off a waggon-load of hay, and fractured the spine at the second, third, and fourth lumbar vertebræ, they being considerably displaced laterally. He was paralyzed below the injury for a considerable period, although now he is partially recovered; but the arms became contracted, and so firmly that the humeral part of them rests fixed to the side—the fore-arm on the humeral part, and the hand on the fore-arm, with the fingers firmly clenched. The cases which I shall presently relate very much resembled this, without an accident occuring

Tympanitis frequently occurs in local hysteria. In concussion of the spine we see the same. Tympanitis is a frequent symptom attending it. Again total

or partial retention of urine occurs in local hysteria. The same happens in injuries of the spine also; and if the bladder be sufficiently long paralyzed in the former affection, the same morbid changes of the organ occur; the mucous membrane is found inflamed, and the urine fœtid and decomposed."

After some remarks upon tympanitis, to which we need not refer more particularly, Mr. Staffords proceeds:—

"To continue, however, with the comparison of the similarity of local hysteria with affections of the spine, let us observe the symptoms where there is visible disease of the vertebral column. In these cases we see the same class of symptoms: total or partial paralysis of the lower extremities; loss of motion, or of feeling individually, or in an equal ratio; spasms and cramps in the muscles; paralysis of the bladder causing retention of urine; loss of power of the rectum; and inaction of the bowels. How commonly, also, do we find that the patients complain of pain in the hip, the knee, and the ankle, and refer their sufferings rather to one of these joints than to the spine, where there is evident disease!

Contraction of the lower limbs likewise not unfrequently occurs where there is angular curvature, examples of which I shall presently relate. In some cases, also, there may be extreme tenderness and increased sensibility of the legs, and more particularly in the feet. On the contrary, in others there may be a sense of numbness and dead weight, although the locomotive powers are complete.

In addition to these symptoms, how frequently do we find, when destruction of the vertebræ has taken place, and the curvature is advancing, that the patients, and particularly females, suffer from symptoms resembling inflammation of the viscera! Hence they may have acute pain and extreme tenderness in the region of the liver, the stomach, and intestines; and bearing all the characters of hepatitis, enteritis, gastritis, and peritonitis. When we consider the intimate and frequent connexion of the medulla spinalis with the sympathetic, and the various organs this latter nerve supplies, it is not difficult to account for any symptoms which may occur; it is natural to suppose, if any portion of the cord be affected by disease, from pressure, irritation, or deviation, from its normal course, that not only the nerves immediately derived from it, but those collaterally connected with it, would suffer derangement of function. Such, then, being the similarity of the symptoms of these affections, with those where there is real and perceptible injury and disease of the spine, it appears to me fair to infer that they arise from some functional derangement or morbid condition of the medulla spinalis."

We notice these views not simply on their own account, but because they are ramifications of the doctrine of spinal irritation, which has become rather fashionable.

Mr. Stafford, it will be observed, uses a certain change of argument to shew that "local hysteria"* is identical with spinal affection—and he supports that argument by cases. Those cases, at least some of them, are certainly instances of spinal affection, attended with pains and contraction of the muscles of the extremities. But we do not hesitate to affirm that those cases are not fair instances of "local hysteria affection," and therefore prove nothing with regard to *its* nature. On this point then we join issue with our author. His cases, we repeat, may be instances of spinal affection, but they are *not* instances of hysteria.

We therefore turn to his argument. The gist of it is, that the various symp-

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* There cannot be a doubt of the impropriety of the application of the term "hysteria" to the local nervous affections in question. But the term *is* applied and provided that all understand its force and meaning, it matters little what the term may be.

toms of hysteria find their analogue (we use the phraseology which is now the mode) in the symptoms of spinal disease. Picking out particular symptoms, as Mr. Stafford does, such an analogy may be perceived. Nor can we wonder that it is so. The spinal marrow is a portion of the great nervous centre. Its affections, and other affections of the nervous system, will naturally, then, display the features of family resemblance.

But while we grant that there may be analogy between the symptoms of the one disorder and the other, it does not follow that there may not be differences as striking as the similarities, and such differences there are.

If, in spinal disease, there is loss of motion, or of feeling, that loss is of a more or less permanent character. It is *not* absent one minute and present the next. It is *not* present if the patient's attention is directed to it, and gone if she is diverted from thinking of it. It is *not* present before marriage, and magically dispersed by a husband or accouchment. It is *not* unaccompanied by pyrexia or by symptoms of grave implication of some important organ. It is *not* attended with symptoms of the most heterogeneous character, aping all diseases, permanently retaining the impress of none. It is *not* seen in the multitudes of young girls, whom it leaves after a while in comparative health, to play their parts as wives and mothers.

All these points of dissimilarity, points which mark the grand distinction between a malady which has and which has not a habitat in some vital organ, Mr. Stafford has omitted to notice. Were such a line of argument permitted, were such reasonings received and deemed conclusive, we might in turn, pronounce hysteria general or local, to be each of the diseases that it simulates. It would be organic uterine disease—"white swelling"—diseased spine—insanity—hepatitis—diseased lungs—the whole nosology.

We feel assured that this chimera of "spinal irritation," or spinal alterations, as the essence of hysterical affections, will, after its due season, pass away, and be buried in the crowded grave of pathological fancies.

ROYAL INFIRMARY OF EDINBURGH CLINICAL REPORT. BY J. SYME, Esq.*

We extract a few cases from this interesting Report.

1. *Dislocation of the Thigh-bone on the Dorsum Ilii, of nine weeks' standing, reduced.* W. S. aged 36, a mason in Dunfermline, fell while walking on the road, from his foot becoming fixed in a cart track, and dislocated his left thigh-bone upwards. He applied to a bone-setter in the neighbourhood, and also to a regular practitioner, who attempted without success to effect reduction. He then proceeded to a famous bone-doctor near Perth, who told him that the injury, having existed so long, nearly five weeks, could not be remedied. He was now recommended to Mr. Syme.

The patient possesed a strong muscular frame, and the bone had become very moveable in its new position. So far the circumstances were unfavourable and rendered the prospect of success still less promising than it appeared to be, from nearly nine weeks having elapsed since the accident happened. It being still considered right to make an attempt, the day after his admission, on the 6th of December, the patient, after losing sixteen ounces of blood from the arm, was put into the warm bath for an hour. He was then carried into the theatre and took at intervals a solution containing four grains of tartrate of antimony. He lay upon his right side, with a mattress between him and the floor. A hair

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* Edinburgh Med. and Surg. Journ. Oct. 1838.

cushion was placed in the perineum, over which and obliquely round the pelvis a broad canvas band was passed, and fastened to a ring in the wall. A skein of worsted being then secured to the thigh immediately above the knee by the *clove hitch*, extension was effected by the aid of pullies nearly in the direction which the limb had acquired through the displacement of the bone. At the end of 40 minutes reduction was effected without any snap or perceptible grating. He recovered quickly, and shortly after his dismissal, walked fifteen miles without difficulty.

2. *Dislocation of the Thigh-bone upon the Dorsum Ilii, of six weeks' standing—reduction.*—E. W. aged 26, admitted on the 17th July, having met with the dislocation six weeks previously.

"She was admitted at 11 A.M. and immediately placed in the warm bath, where I found her on making my visit at 12. As her muscular system did not seem strong, or likely to afford much resistance, I proceeded to attempt reduction without any further preparation, except administering a dose of tartrate of antimony. The process was conducted as has been described above, and at the end of ten minutes proved successful, the bone returning into its place with a dull grating sensation."

Another case is detailed. In all of them, the extension was not maintained continuously, but completely relaxed from time to time, in order to fatigue the muscles, and disturb the patient's involuntary efforts to resist the exertions for his relief.

Two cases of dislocated shoulder-joint occurred in the course of the Winter, respectively of two or three weeks duration. They were both easily remedied by extending from the wrist in the direction of the long axis of the trunk, so as to prevent the *latissimus dorsi* and *pectoralis major* from opposing the resistance which they are apt to do when extension is made transversely. We think this latter observation practically very valuable.

3. *Fortunate Treatment of Fracture at a late period.*

In his observations on a case of fracture of the thigh-bone which was made to unite, after having been treated unsuccessfully for six months, Mr. Syme observes:—

"About two years ago, there was a case of this kind in Perth, which attracted considerable attention. The patient, a gentleman between thirty and forty years of age, was treated by a surgeon of great experience and respectability, for a fracture of the thigh, during six weeks. At the end of this time, the limb was taken off the double-inclined plane on which it had been laid, and found to be shortened as well as distorted, very much in the same degree and direction as in the case just related. The patient then proposed a consultation, which was opposed by his attendant, on the ground that no good could be done by any mode of treatment at that distance of time from the injury. He therefore placed himself under the care of another practitioner, who sent for me to consider with him what should be done. I suggested the same plan that has been described above, and was happy to hear that, through the assiduous care of Dr. Malcolm, it soon had the effect of rendering the injured limb perfectly straight and strong."

The plan to which Mr. Syme alludes is neither more nor less than the careful application of the long splint.

4. *Why torn Arteries do not bleed.*

"The amputated limb afforded a good example of the mode which I have repeatedly described in former reports as the true explanation of torn arteries not bleeding. The internal and middle coats of the vessel were not irregularly lacerated or disposed so as to obstruct the passage through it, but presented a

smooth circular edge, round and beyond which the external or cellular coat had collapsed in the form of a conical bag filled with coagulum."

5. *Fistula in Ano—Operation unsuccessful from not including the Internal Aperture in the Incision.*

Donald Gunn, aged 31, from Cape Wrath in Sutherlandshire, came to Edinburgh, last January, on account of a *fistula in ano*, from which he had been suffering two years and a half. He was admitted into a public institution, and subjected to an operation, eight days after which he was dismissed as cured.* Finding that his cure consisted in his being worse than ever, he applied at the Edinburgh Infirmary.

On examination it appeared that a deep gash had been made into the rectum. The edges of the wound were swelled, and shewed no disposition to heal. Searching for the cause of this, Mr. S. found an internal aperture at some distance to one side of the incision, which, probably, from being made towards the summit of the sinus, was much deeper than necessary, and in a wrong direction. He divided the parts that lay between the internal aperture and the wound, after which the patient quickly got well.

"For a number of years past I have endeavoured to direct attention to the important observations of M. Ribes in regard to the general existence and uniform position of the internal opening of *fistula in ano*. From the case just related, and many others that might be mentioned, it seems that sufficient care is still not bestowed on this point of practice. In the course of last winter I saw a man of rank and consequence who had been operated upon seven years before by a surgeon of this city for *fistula in ano*. He suffered deep incisions and a two months' confinement, but did not get quit of his complaint. Sinus after sinus formed, and he despaired of ever being well. I found an internal opening, made the necessary incision, and sent the patient home perfectly sound at the end of a fortnight."

Mr. Syme must be owned to have been very lucky. It has not been our fortune te see patients perfectly sound in a fortnight however perfectly the sinus was divided. No doubt there is often much unnecessary gashing, and often as much bungling. It is to draw attention to the fact that the internal aperture of fistula is almost always low in the gut, that we have noticed this case.

6. *Extraordinary Operations for Hæmorrhoids in Edinburgh.*

"About three months ago, a gentleman, between twenty and thirty years of age sent for me, in the hope that I might be able to suggest something for his relief, and thus related the sad history of his sufferings.

In July 1837, he visited a watering place about thirty miles from Edinburgh. While there he one day had a long walk after taking medicine, and, in consequence, perceived a fold of skin at the orifice of the anus swelled and painful. This external pile, being a new ailment to him, so excited his apprehension as to induce an immediate return to town. He travelled in a carriage, and of course aggravated the complaint by doing so. A surgeon was sent for, who applied leeches and poultices for *four* days, and then intimated the necessity of an operation, which he accordingly performed. This was scooping out a portion of the gut, an inch and a-half in length.

The cavity was stuffed with a sponge, and the patient's legs were tied together. He was not able to turn himself in bed for three weeks, being all this time he said stupified with pain and the large opiates that were administered to him. His urine was all taken away by the catheter. At the end of two months he was

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* How any man could be pronounced cured in a *fortnight* after the operation for fistula passes our comprehension.—*Rev.*

able to go down stairs, and then got his dismissal to the country, with instructions to prevent the anus from contracting too much by *occasionally introducing his finger into it.* But notwithstanding all the care that could be used by a most respectable practitioner, who, in compliance with instructions sent to him, attempted to introduce tallow candles, and had some made on purpose of a most diminutive size, the orifice became smaller and smaller, until it would hardly admit a quill.

The patient returned to town, and he supposes had incisions made to enlarge the opening, at least he felt acute pain, and saw blood flow. Weiss's instrument for dilating the female urethra was then introduced, and screwed open for half an hour with excessive agony. This operation was repeated every second day for four months. He then went to the country, and passed a bougie every third or fourth day. Finding no improvement at the end of three months he had returned, in despair of ever regaining his health. He had no evacuation of his bowels unless by taking medicine; and when the desire to discharge the thin matters contained in the gut came upon him he had no power to restrain their escape. He felt constant uneasiness and burning pain about the anus, and through the whole pelvis. He was thin and haggard-looking, and unable for any exertion of body or mind."

Comment on such a case is superfluous. The singular thing is, that according to Mr. Syme:—

"The fact is, that removal of the extremity of the rectum has of late years been taught and practised in this city, as the best mode of treating those hemorrhoidal affections which are generally comprehended under the title of *prolapsus ani.*"

DUNDEE LUNATIC ASYLUM.

EIGHTEENTH REPORT OF THE DIRECTORS.

The pages of our present Number will afford evidence not only of the general interest felt on the subject of insanity, but, also of our own desire to promote the general amount of knowledge on its characters and treatment.

The leading objects of the Report before us would appear to be;—first, the confirmation of the value of employment of the insane—secondly, the recommendation of public worship. The Report is not long, at least the medical part of it is not, and we shall present what portions seem to be likely to prove useful.

1. The number of admissions during the past year has exceeded that of former years, has outrun, indeed, the accommodation.

Of those admitted several were insane before but had been cured—such cases are always more difficult to treat than others. The powers of the brain seem, by repeated attacks, to become gradually weaker, leaving the individual at last in a silly, childish, idiotic state. At least one half of those relapses have supervened without any known cause, and nearly the whole of the remainder can be distinctly traced to intemperance in the use of ardent spirits

A young girl, upwards of fifteen years of age, was admitted labouring under hysterical mania of three or four years' duration. The cause of the disease in this instance, though rather uncertain, is supposed to be a fright. Her symptoms are remarkable. While sitting in the room, and without the slightest perceptible cause, she will spring up and roar in the most terrific manner, and as suddenly become quiet, and either sit like a statue, apparently unconscious, or speak calmy and intelligently. When she makes this noise she hideously distorts her features. She is very often vicious, and so powerfully violent that she has been known to clear the apartment of all the other patients.

A young man who was obliged, from his violence, to be restrained for some time, requested, after he became convalescent to be allowed to sleep with one part of the confinement near him in bed, and much to his gratification this was agreed to. On being questioned, he gave for a reason, that when the article was near him he felt confident of being perfectly secure.

2. *Remittent Mania.*—There are in the Asylum several old cases of remittent mania In many of these cases the actions of the system are exalted to an extraordinary degree, and continued for a long period before nature becomes exhausted. The paroxysms generally come on without any very evident cause. As they are, however, more frequent in some cases in Summer than Winter, it is probable that heat has some effect in producing them. They vary too in their kind and duration. During the paroxysm the strength, even of old persons, is astonishingly great,—wakefulness, loquacity, obscenity, violence, fætor &c., with a peculiarly vivid expression of eyes and countenance, are the most prominent symptoms. These paroxysms sometimes continue, without intermission, for days, weeks, or months, baffling all attempts to allay the excitement. But some of this unfortunate class of patients seem happy amidst their turmoil, and mischief—they appear absolutely enjoyed, singing and talking in the merriest strain possible, and in many respects resemble the drunkard when in a certain stage of excitement. Bye-and-bye a change suddenly takes place in their appearance—the pulse falls, the eye loses its lustre, they become quieter, heavy, sleepy, exhausted, stupid and partially unconscious; they will then dose for days, perhaps weeks, passing their motions, involuntarily, requiring wine, and the most nourishing food, with the utmost attention, to keep them alive. Soon after gaining a little strength, the same state of excitement is suddenly reproduced, to be succeeded by the like depression, and this course will go on for years, till death puts an end to the scene. Nothing can be more remarkable or striking than the changes which take place in these lunatics. A stranger seeing them in their different states would scarcely believe that they were the same persons.

Patients whose malady intermits become fat and stout in the absence of their paroxysms; other lunatics, who are only occasionally irascible and obstreperous, are quickly relieved by medicine, baths, and seclusion, and generally in a day or two are fit to resume their work. On the appearance of premonitory symptoms they are immediately removed from where they could do mischief to themselves or others.

3. *Causes.*—"We have great difficulty, and do not always succeed, in procuring a proper history of every case. The cause of the malady, in particular, is very frequently concealed from us; but, if we deduct the nine from the moral causes who are also hereditarily affected, we find, in those admitted, that the physical causes are the most productive of insanity. But in both classes the result is, that nearly one half have had an hereditary tendency to this disease. The slightest cause, or rather what would not at all affect others, is quite sufficient to produce the malady in those who derive the disorder from their parents. In some families the tendency is so strong that we have several times had more than one member of them."

4. *Treatment.*—"As a general rule every individual case requires a different plan of treatment. Various remedies are employed; but we find, as stated in former reports, that there is no specific for the cure of insanity. Topical blood-letting is of the greatest service, so is dry cupping. Blisters, and a liniment composed of the tincture of cantharides, the spirit, of hartshorn, and croton oil, applied twice or thrice to the shaven scalp have also proved beneficial. General blood-letting is very rarely resorted to. Baths of all kinds and cold lotions are

in constant requisition, and are used with great advantage. Calomel, jalap, salts, rhubarb, tartar-emetic, colocynth, and croton and castor oils are in general use. The grand principle of moral treatment consists in directing the mind of the patient from the subject or subjects on which it is deranged to those on which it is not. As reason is disordered, it is obvious that all attempts to restore it by merely discussing with the insane the subjects on which it is disordered must fail. No appeal to fact *versus* fiction proves useful; a self-evident proposition frequently, or rather generally, appears to them to be absurd. It requires, therefore, much firmness, much caution, and a clear judgment, as well as quick perception, in conjunction with the best feelings of our nature, to bring moral treatment to bear successfully on the mind of the lunatic. Occupation offers many advantages; and idleness to the insane, as well as to those of sound mind, is itself a punishment; and to that portion of the monomaniacs who converse rationally on ordinary subjects, and generally conduct themselves with propriety, occupation is both an amusement and a powerful agent in recovery. Perhaps the good effects of this plan are best seen in the violent lunatic immediately after he has been subjected to the necessary medical treatment. To the ordinary maniac it has been of great service; to those bordering on fatuity it has also done good; and we may indeed add, in all cases where tried it has proved in some degree beneficial. The very bustle, excitement, and change, that our manufacturing and other works create in the house do good; which is also in some measure felt by those lunatics whose high rank and education prevent them from joining in these healthful exercises. It must, however, be admitted that medical as well as moral treatment succeeds in a much greater degree in the recent than in the old cases. No accident whatever has occurred, since the introduction of this plan of moral treatment in 1830, notwithstanding all kinds of tools and implements are daily used by the patients. In addition to the healthful exercises in which the ladies and gentlemen engage, such as music, dancing, and walking into the town and neighbourhood, and—which have been alluded to before—they are permitted to go into the country for several hours, in open or close carriages, according as the weather, &c. permits. In regard to restraint, moral treatment may itself be considered as a means of restraint, for it has generally superseded the other articles used for that purpose. To apply restraint properly is a most difficult and most painful, though in some cases an absolutely necessary task; and no one can execute this delicate business well who has not been accustomed to the treatment of the insane. It requires great humanity, great experience, and decided skill in the application of it. We have seen it have the most extraordinary good effect, owing in a great measure to the way it was applied."

The following is an interesting case.

In the Spring of last year a cabinetmaker was admitted labouring under deep-rooted melancholy, who had been nearly twelve months affected. We tried all kinds of treatment, and at last by our perseverance have been entirely successful. In September he asked for his tools, they were immediately procured—a bench was got—and wood purchased; he shed tears—always said he was just going to begin to work, but something mental always prevented him, and he continued in this state till last April, when his depression almost left him, and he began to work in earnest. Since that time he has made handsome chests of drawers, &c., and has been cured, not more to the delight of his relatives than of us. This case is instructive, and shows how much can be done by a persevering plan of treatment, even with patients whose malady is of long duration. Another lunatic who was bred a flesher, after he became convalescent, made himself generally useful, and slaughtered and cut up the pigs for the use of the Institution.

6. *Public Worship.*—"In this country the first institution which gave to its

inmates the benefit of religious instruction was the Glasgow Royal Lunatic Asylum, and this was done, on the recommendation of its physician, nineteen years ago. In 1831, divine service was introduced here, the members of the Presbytery taking the duty Sabbath about, until a regular chaplain was appointed. Every succeeding Report has truly stated that nothing but good has resulted from its introduction, and that it has been and is highly appreciated by the lunatics in this Asylum, and to these statements we gladly bear testimony; and it is gratifying to learn that the other private and public asylums which have followed the good example set by the Glasgow one, confirm what is here stated—thus showing not only the great utility, but the safety, of public as well as private worship, to those labouring under lunacy.

Such are the main features of the Report, which we may observe emanates from Dr. Nimmo and Dr. Mackintosh. We trust that they will endeavour to render the Institution as beneficial to the profession and to science as possible. Careful reports are of immense service.

EXPERIENCE OF MR. PORTER IN PUNCTURING THE DURA MATER AFTER TREPHINING.

The following remarks are extracted from a Lecture on the Trepan, by Professor Porter, in our clever contemporary, the Dublin Medical Press.

Suppose, he says, that the trepan has been applied, and neither blood nor matter found—shall the dura mater be opened to search for the cause of mischief? Setting aside reasoning and other authority, Mr. Porter states, and we quote the facts with which he is actually acquainted.

"I must say that both my reason and experience are directly opposed to the operation. I have seen it performed, and performed it myself. In one instance of compression, the trepan was applied over the seat of the injury, or rather on the spot that had received the blow. Immediately on the piece of bone being taken out, the dura mater and brain rose into the vacant space; as if suddenly relieved from some compressing force, and (what seemed to decide the operator on puncturing the dura mater,) the brain did not exhibit the usual phenomenon of pulsation. The membrane was cautiously divided, but nothing found; and dissection shewed afterwards, that the extravasated blood was situated at the base of the brain. In the month of December, 1836, I trepanned a man for symptoms of compression, the result of inflammation, and apparently produced by matter. On removing the bone, I found that a scale had been broken from the internal table, and wounded the dura mater, and on this being taken away a small quantity of pus pumped up through the little aperture. I thought that if there ever was a case to justify proceeding further, it was this one; the membrane had already been wounded, and I had ocular demonstration of the existence of matter underneath. I, accordingly enlarged the opening, but I took nothing for my pains, no more matter was evacuated, and it was found, after death, that it could not have been, for it was smeared over the surface of the dura mater, closely adherent to it, and by no possibility capable of being removed. In a former lecture I stated that there was no circumstance to justify a surgeon in cutting through the dura mater, and I am strongly disposed to repeat the precept here."*

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* Dublin Medical Press, Feb. 13th, 1839.

Clinical Observations on the State of the Heart and on the Use of Wine in Typhous Fever. By William Stokes, M.D. &c.*

The object of Dr. Stokes is to determine with precision the symptoms or circumstances which indicate the exhibition of wine in typhous fever, We may observe, in limine, that Dr. Stokes repudiates the doctrine of exclusive solidism, the modern theory that fever is but the symptom or effect of some local lesion.

"There can be no doubt," he says, "that the typhus of Great Britian and Ireland is a disease of the whole system, not symptomatic of any particular local lesion; shewing on the one hand a tendency to a favourable termination, after a period which varies indefinitely; and on the other, being capable of destroying life *with* various lesions, or *without* any appreciable change in the solids. It is a disease on which anatomy sheds but a negative light, not telling us what it is but rather what it is not.

With respect to the organic lesions, I consider them as much secondary to the general disease, as the pustule in small-pox is to the disease of variola. Their not unfrequent absence in the worst cases of the disease proves that they are not the cause of typhus, while in cases where they do occur, we observe a signal want of proportion between their amount, and the severity of the symptoms. They are in the fullest sense inconstant in their seat and extent, incompetent to the explanation of symptoms, and unnecessary to the characteristic phenomena of the disease."

After some remarks on the greater frequency of intestinal ulceration in the fevers of the Continent and those of Great Britian and Ireland, Dr. Stokes proceeds to observe:—

"If we compare the inexperienced man with him who has had a long continued practice in fever, we may often observe that the former employs a too vigorous antiphlogistic treatment in the commencement of the disease, and delays the exhibition of stimulants until the powers of life are sunk too low, while the latter is much more cautious in husbanding the strength of his patient, and shews much less fear of resorting to wine and other stimulants. It is in determining on the use of wine in fever that the junior or inexperienced man feels the greatest difficulty; it is in its exhibition that he betrays the greatest uncertainty and fear. This is to be explained by referring to the general character of the doctrines which have prevailed within the last quarter of a century, and which are only now beginning to yield to a more rational pathology. The doctrine of an exclusive or almost exclusive solidism, which referred all diseases to visible changes of organs, which taught that inflammation was the first and principal morbid phenomenon, and that fevers were always the result of—or accompanied with—some local inflammation, was, however disguised under various denominations, the doctrine taught to the majority of our students. Their ideas were thus exclusively anatomical; inflammation formed the basis of their limited pathology, and thus instructed, they entered on the wide field of practice, most of them having never even attended a fever hospital; utterly ignorant of the nature of essential fevers, they applied, in the diseases of debility, the treatment of acute local inflammation, and delayed stimulation until nature could not be stimulated."

But the question comes—"what distinctive symptoms call for wine—how shall the inexperienced practitioner know when it is required?" Dr. Stokes thinks that to the want of wine the loss of many lives may be ascribed, and the very object of his paper is to endeavour to furnish some signs by which we may learn to give or to withhold stimulants.

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* Dublin Journal, March, 1839.

It has long been known that if, under the use of wine, the pulse diminishes in frequency, the prognosis is favourable—if, under the same circumstances it becomes more rapid, our anticipations grow more gloomy. Reflection on this point led Dr. Stokes to endeavour to ascertain, whether any appreciable condition of the heart, besides the frequency of its contractions, would furnish the indication that was wanted. This inquiry he pursues with great zeal and with much interest through his lengthened paper. We cannot follow him throughout his observations and his cases, but we must content ourselves with stating the results, and recommending our readers most earnestly to consult the original paper. The conclusions of Dr. Stokes are :—

1. That the condition of the heart in typhous fever must be determined by the application of the hand and stethoscope, the pulse being an uncertain guide.
2. That a diminished impulse, or a complete absence of impulse occurs in certain cases of typhous fever.
3. That in such cases we may observe a diminished first sound, or even an absence of the first sound.
4. That both these characters may exist with a distinct pulse.
5. That although in most cases the diminution of the impulse and first sound coexists, yet that impulse may exist without corresponding first sound, and conversely, that the first sound may be heard although unaccompanied by impulse.
6. That these phenomena are most evident as connected with the left side of the heart.
7. That when the impulse and first sound are lessened or lost, the return to healthy character is observed first over the right cavities.
8. That in some cases both sounds are equally diminished.
9. That in few cases the first sound preponderates.
10. That these phenomena indicate a debilitated state of the heart.
11. That they may occur at an early period of the disease, and thus enable us accordingly to anticipate the symptoms of general debility.
12. That the existence of these phenomena, in a case of maculated adynamic fever, may be considered as pointing out a softened state of the heart.
13. That this softening of the heart seems to be one of the secondary local lesions of typhus.
14. That the diminution or cessation of impulse, the proportionate diminution of both sounds, or the preponderance of the second sound, are direct and nearly certain indications for the use of wine in fever.

SPIRIT OF THE FOREIGN PERIODICALS, &c.

On Vaccination and Small-pox

In the last number of this Journal (vide page 271) we commenced an article on the present state of Vaccination in different countries of Europe, and, as it was left unfinished, we promised to continue the subject at our next trimestral appearance.

We stated the prevailing doctrines and practice of the German physicians, more especially in reference to the question of Re-vaccination, which has been adopted so extensively in the armies of Prussia and of some other states. We now proceed to explain what has been done and observed elsewhere; and shall then close our remarks with a series of corollaries, embodying most of the important information which has hitherto been obtained.

In no country has vaccination been prosecuted with more enlightened and assiduous zeal than in Denmark. The reports from this, as well as from every other country where it has been introduced, concur in loudly proclaiming the benefits of the great discovery; and, as very exact tables of mortality seem to be kept in Copenhagen, we have been enabled to ascertain the following particulars, in reference to the question now under consideration.

From the year 1800 to 1804, not a single case of small-pox in a vaccinated person was observed in that city. In 1804, two cases only occurred; and in both of these the disease exhibited a modified or *varioloid* character. In 1805, five persons (vaccinated, we presume) died from small-pox. In 1806, three vaccinated persons died. In 1808, there were 46 deaths in all from small-pox; and, of this number, 13 occurred in persons who were reputed to have been regularly vaccinated. In 1819, the number of cases of small-pox among vaccinated as well as among unvaccinated persons had very considerably increased; and in 1823, there was a regular epidemic of the disease in most parts of the kingdom.

During the three subsequent years—from 1824 to 1827—there was an annual renewal of the epidemic; and the following particulars are derived from the reports of Dr. Mæhl, physician of the small-pox hospital at Copenhagen. From January 1824 to Febuary 1825, there were admitted 412 cases of genuine and modified small-pox. Of these 412 cases, 257 occured in persons who had been vaccinated, 58 in persons who had passed through small-pox before, and 97 in persons who had not had either the cow-pox or the small-pox.

The ages of the 257 patients it is important to attend to, as we are thus enabled to form some idea of the length of time that the protecting influence of vaccination may be supposed to last:—

24 were under seven years of age.
42 were between seven and eleven years of age.
191 were between twelve and twenty-three years of age.

257

So much for the age of the patients; and now for the character and issue of the disease. Of the whole 257 cases, there were only 16 of genuine small-pox; in all the rest the disease was more or less decidedly modified. Of the 16 cases, only 3 proved fatal; and these three occurred among adults.

It is needless to point out to the reader's attention how these facts strongly bear out the idea, now generally received, that the protecting influence of vac-

cination decreases progressively with the length of the time that has elapsed since it was performed. The number of deaths among the remaining 155 cases was 37. (It is not stated whether any of these cases occurred among the 58 patients who had been previously affected with the small-pox.)

In the following epidemic, which commenced in September 1825, and did not cease till the middle of 1827, 625 cases of *variolous* and *varioloid* disease were admitted. Of these, there occurred in persons who had been vaccinated 438 cases,* in 26 of which the disease was genuine variola; two of these proved fatal. By far the greater number of the 438 patients were upwards of ten years of age.

The next epidemic made its appearance in March 1828 and continued, with only a few short interruptions, to July 1830. During this period, 562 patients affected with *variolous* or *varioloid* disease were admitted. Of these, there were 111 cases of genuine variola, and 28 of them proved fatal. In 29 of the 111 cases, the patients had been vaccinated. The deaths were 24 among the unvaccinated, and 4 among the vaccinated patients—the ratio being about 1 in 3 among the former, and 1 in 7½ among the latter.

Of the 37 vaccinated patients, all, with the exception of one only, were adults —thus affording another proof that the protective influence of the cow-pox ceases only after the lapse of a considerable number of years.

In August 1832, commenced the most violent epidemic of small-pox in Copenhagen, which had been known since the introduction of vaccination. From that period till towards the close of 1834, 1045 patients were received into the hospital. Of this number, 898 had been vaccinated, and 147 had not. Of the former, 10 only died; whereas among the latter, there were 34 deaths.

Of the 1045 cases, there were 179 of genuine small-pox, of which 119 occurred in unvaccinated and 60 in vaccinated persons; the remaining number exhibiting the varioloid character.

Not one of the cases of the genuine disease occurred in a vaccinated patient under 14 years of age; and every one of the 10 patients who died was above 22 years of age.

To these facts it may be added that not a single instance of variolous or of varioloid disease during this and the preceding epidemic was observed among any who had been re-vaccinated.†

During the year 1835, small-pox continued to prevail very extensively in Copenhagen. From May till the end of December 1197 cases were admitted. Of these, 1043 occurred in vaccinated, and 125 in unvaccinated persons; and as to the remaining 31 patients, it could not be accurately ascertained whether they had had either the cow-pox or small-pox before.

Although, in a great majority of the vaccinated patients, the disease was mild and of the varioloid type, the cases were not rare in which all the characters of genuine small-pox, and even of the confluent kind, were observed. There were 47 deaths among the 1043 vaccinated patients; and all of them occurred in persons between 19 and 35 years of age.

Of the 123 cases which occurred in unvaccinated persons (some of whom had had small-pox in their infancy) 51 proved fatal. Among these, five occurred in infants, two in children below 10 years of age, and the rest in adults.

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* We were somewhat surprised at first on finding such a large proportion of the cases occurring in vaccinated persons. But this is probably attributable to the universal adoption of vaccination among all classes in Denmark, and to its consequent failure in numerous instances. If we are not mistaken, it is rendered imperative by the Government; but the operation may be performed by clergymen, midwives, and many other unprofessional persons.

† The Danish Government has, within the last few years, ordered that all the soldiers of their army and all fresh recruits be re-vaccinated.

Again it was observed that all persons, who had been re-vaccinated, escaped the epidemic contagion.

We shall now briefly direct our attention to the state of one or two other countries in Europe, in reference to the march of variolous disease, and the influence which vaccination has exerted upon it. It is most gratifying to observe the uniform and invariable decrease in the ravages of small-pox after the first introduction of vaccination, throughout every country without exception; and to find that the medical men in all parts of the globe bear the same unequivocal testimony in its favour.

In Sweden the decrease of the mortality from small-pox may be judged of by the following table:

From 1782 to 1791, 47,587 deaths.
From 1792 to 1801, 44,184 —
From 1802 to 1811, 14,904 —
From 1812 to 1821, 3,309 —

In 1822, the mortality seems to have fallen to its *minimum*. After this year, the small pox began to regain, in part, its lost ground. In 1824, there were 560 fatal cases; of these, 103 occurred in persons who were supposed to have been vaccinated.

Every one of these 103 patients was upwards of 15 years of age; whereas among the other 457 fatal cases (in unvaccinated individuals) 229 occurred in children under two years of age, 162 in those between 2 and 15 years, 98 in persons between 15 and 25 years, and the remaining 71 in persons above the latter age.*

Here E. *Dezeimeris* (from whose paper, in a recent number of the French Journal *L'Experience*, we have derived most of the preceding data) remarks that, after examining these and similar documents, it is impossible to escape from the conclusion that vaccination is *absolutely preservative* against small-pox contagion for about ten years after it has been performed, *simply protective* for a few years longer, and at length that it is *insufficient* to prevent even a fatal attack of the disease. He adds that, during this epidemic, the number of second attacks of small-pox—most of which were very severe—was not much inferior to the number of fatal cases occurring in vaccinated persons.

In the years 1831 and 1832 there was another wide-spread epidemic of small-pox in Sweden. Now mark the conclusion which Dr. *Westman*, the Physician of the Provisional small-pox Hospital at Stockholm, deduced from his extended observations:

The disease was violent in adults, who had been vaccinated in their infancy; it exhibited more and more distinctly the modified character and was milder and milder in proportion as the patients had been more and more recently vaccinated; and lastly children, who had been vaccinated a short time before the invasion of the epidemic, altogether escaped.

So much for what has been observed in Sweden. Let us now hear what has been the state of vaccination and of small-pox epidemics in the adjacent country of Norway. Although vaccination was practised there since the close of the last century, it was not till 1810 that it was made imperative upon all by an edict of the government. From this period to about 1819, no variolous epidemic was known in the country. But even since that latter year, the genuine small-pox and also the various forms of varioloid disease have been progressively on the increase.

The prevailing opinion among the Norwegian physicians at present is, that genuine small-pox seldom or never attacks those persons, in whom vaccination

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* The reader will probably remark an incongruity between the sum total of the separate numbers and the aggregate number of 560 mentioned at first.—*Rev.*

had produced a normal and perfect eruption of vesicles on the arm: but that such persons may however contract a varioloid disease.

Dr. Holtz, one of their ablest physicians and a professor in the University of Christiana, in adopting these views, has very properly alluded to the extreme difficulty of ascertaining exactly what had been the actual condition of the vaccine vesicles in many persons, who have subsequently suffered from the small-pox contagion.

A great number, especially in the country, received certificates of having been vaccinated, although they had never been examined by the medical men after the operation was performed.

The Norwegian Physicians are inclined to the opinion that the vaccine virus has lost a certain degree of its active powers in passing successively from one individual to another; and they therefore recommend that a fresh supply should be occasionally taken from the cow itself. It would seem that the disease has never been found upon that animal in Norway; and hence the virus in use there has always been derived from other countries.

We have already stated that vaccination is made obligatory upon all in Norway. No one can be admitted into any public establishment, nor even confirmed nor married, without producing a certificate of having been vaccinated. Moreover, the inoculation of small-pox is prohibited; and any person practising it is liable to severe punishment.

Re-vaccination has not yet been *ordonneé* in Sweden and Norway by a public edict; but it has been pretty extensively practised by some of the medical men in both countries; and it is generally believed that, if it was universally adopted, not only the *variolous* but also the *varioloid* contagion might be arrested.

In France, very little comparatively has been done to advance our knowledge on the various important topics connected with vaccination. The general question has however very recently come under the consideration of the Royal Academy of Medicine, in consequence of its having been made, last year, the *theme* for one of the great *Monthyon* prizes, which are annually awarded to the best essay on some medical subject.

It would seem that re-vaccination has been hitherto very little practised in France; but it is right to state that some of the most experienced and practical members of the Academy, such as M. *Bousquet*, the head of the vaccine board, and MM. Chomel, Andral, and Bouillaud, all concurred in recommending the practice, at a recent *séance* of that learned body.

There was considerable difference of opinion expressed as to whether the vaccine lymph has become deteriorated of late years; and particular stress was laid on the results of the experiments, which were a short time ago performed by M. *Bousquet* with virus obtained directly from the cow.*

Lastly, we must briefly allude to what has been recently observed at home on the important questions connected with vaccination.

From the last report by Dr. Gregory of the small-pox Hospital in London, it appears that, during the year 1838, 694 cases of small-pox were admitted; besides which, more than 100 persons affected with the disease were refused admission from want of accommodation.

Of the 694 cases, 298 occurred in persons reputed to have been vaccinated; and of these 298, 114 exhibited the mild and safe form of the disease called the varicelloid: in 66 the disease was severe at first, but shortened and modified in its subsequent stages; and in the remaining 118 (or 40 per cent.) it presented the regular, normal, or unmitigated form; and in these last the rate of mortality was nearly the same as in patients who had never been vaccinated.

"The deaths in this class amounted to 31; but from them some deductions must

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* Vide Medico-Chirurgical Review, April, 1837.

in fairness be made, for, in the Spring of the year, from the crowded state of the wards, fever of a very malignant character pervaded the hospital, affecting indiscriminately those who had, and those who had not, been vaccinated. To that cause, and to superadded erysipelas, the deaths of 8 or 10 among the vaccinated may be attributed, leaving the total mortality by small-pox after vaccination, 21 out of 298, or 7 per cent.

The following table, shewing the ages of the patients admitted during the last year, distinguishing the vaccinated from the unvaccinated, affords some interesting results:

Table, shewing the Ages of the Patients admitted into the Small-pox Hospital in 1838, with the Mortality among the same, distinguishing the vaccinated from the unvaccinated.

Ages.	Unvaccinated.		Vaccinated.	
	Admitted.	Died.	Admitted.	Died.
Under 5 years of age ...	42	20	0	0
From 5 to 9 inclusive	37	11	5	0
„ 10 to 14 „	30	8	25	0
„ 15 to 19 „	104	32	90	6
„ 20 to 24 „	115	50	106	16
„ 25 to 30 „	45	23	55	8
„ 31 to 35 „	12	7	13	1
Above 35 years of Age.	11	6	4	0
Total	396	157	298	31*

From this table it appears, that in the early periods of life the preventive powers of vaccination are almost complete; 5 vaccinated children only, under the age of 10, having been received; while of the unvaccinated, within the same ages, the number admitted was 79, of whom 31 died. At 10 years of age the receptivity of the small-pox in the vaccinated may be said to commence, but the disorder then shews itself only in its mildest form. From 15 to 25 years of age the disposition of the body to receive small-pox after vaccination increases, and the severity of the disease augments in a like ratio. The table indicates a decline in the number attacked by small-pox after the age of 25, but the diminution is equally great among the unprotected as among the vaccinated, and may, therefore, be owing to causes independent of vaccine agency."

With respect to the propriety of general Re-vaccination, Dr. Gregory is quite inclined to approve of the practice, and recommends that it should be done at from 15 to 20 years after the date of the first operation.

Having thus, briefly indeed, stated some of the most important facts, observed of recent years in different countries of Europe, respecting vaccination and small-pox, we now submit to our readers' notice the following propositions or corollaries, as affording in some degree a *precis* or abstract of the most

* Of these 6 died of typhus, 3 of superadded erysipelas, 1 of chronic diarrhœa. Total 10.

valuable conclusions on the subject, which may be drawn from the writers of the best established reputation.

1. There is a close affinity between the nature of small-pox and that of cow-pox. Dr. Jenner regarded the one as a mere variety or modification of the other; both having, according to him, the same origin, and being subject to the same laws. Hence he always called the latter *variolæ vaccinæ*.*

2. As it is well known that small-pox may affect the same individual twice, it is only what we might expect that cow-pox, which is the milder form of the disease, is not an infallible preservative against variolous contagion.†

3. The virus both of small-pox and of cow-pox seems to undergo certain changes in the systems of some persons, becoming either more or less powerfully energetic than usual; and the virus, taken from such persons, may be used to propagate to other persons a more or less active form of either disease.

The late Dr. Adams succeeded in producing a benign form of variola, attended with scarcely any eruption and little or no constitutional affection, by selecting the virus from such patients as exhibited a mild form of small-pox, which occasionally shewed itself in London; and, on the other hand, it has been found that vaccination produces in certain individuals a more than usually active or intense kind of cow-pox vesicle; the lymph of which may be communicated to and re-produced in others, and which *very probably* insures a more than ordinarily complete protection against variolous contagion.

It thus appears that there are various *grades* of the variolous and of the vaccine virus; some being much more active than others.

4. The development and maturation of the vaccine vesicle may be much retarded and modified by several causes. The most important of these appear to be dentition, and the existence of herpetic and other forms of cutaneous disease. Under such circumstances, the *pock* is apt to be more or less irregular and imperfect.

"It is most important to remark, that "the fluid taken from a spurious or imperfect vaccine vesicle can propagate and perpetuate its like; and, even if it be taken from a genuine vesicle in its far advanced stages, it is capable of producing varieties, which will become permanent if we continue to employ it."

5. Whenever there is the slightest deviation from the normal or genuine characters of the vaccine vesicle, vaccination should be repeated. The test-operation,

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* The idea at first entertained by Dr. Jenner, that the disease in the cow is always owing to contagion from horses affected with what is called the *grease*, was soon abandoned by him.

The truth is, that the horse, as well as the cow, is subject to an eruptive disease of a vesicular character during certain variolous epizootics; and the matter of the vesicles on the horse, inoculated upon the human body, will produce as genuine a *cow-pock* as that taken from the teats of the cow.

Dr. Jenner repeatedly used *equine* matter for the purpose of inoculation with complete success. The disease in the horse should be called *variolæ equinæ* and not the *grease*, with which it has no alliance, nor any resemblance, further than that the heels of the animal in both complaints are the seat of ulcerated fissures.

Even poultry seem to suffer occasionally from a variolous epizootic; and it is a curious circumstance that the Hindoos apply the term *gootry* (small-pox) to the disorder. Hence, perhaps, the origin of the word chicken-pox.

† Dr. Baron, in his life of Jenner, mentions a case of extraordinary susceptibility to variolous and vaccine contagion. A child was vaccinated, apparently with success, in India; the operation was repeated on his arrival in England, and again with effect. He was subsequently inoculated for the small-pox, and received the disease; and, after all, he caught the infection in a casual way.

recommended by the late Mr. Bryce of Edinburgh, deserves to be more generally adopted than it has been.

6. The number of punctures to be made on the arm must vary, according as the lymph employed is more or less active. Dr. Heim of Wurtemburgh, and, we believe also, Dr. Gregory of London recommend ten or twelve insertions of the lymph in ordinary use. When the lymph is unusually energetic, as seems to be frequently the case when it has been recently derived from the cow, two or three punctures will often produce as much local and constitutional irritation as ten or twelve punctures with the lymph that has been used successively for a number of years. On this subject we must refer to the work of Jenner himself, to the memoir of M. Bousquet (*vide* Med.-Chir. Rev. April 1837), and to the very interesting report of Mr. Macpherson from Moorshedabad (*vide* Trans. of Med. and Phys. Soc. of Calcutta, vol. vi.).

Fresh fluid lymph, taken directly from the vesicles, is always preferable to that which has been kept and become dry; and lymph from a vesicle in its early stage is certainly more active than that from one that is more advanced.

Whatever be the number of punctures made, it is desirable that a certain degree of constitutional disturbance be induced by the operation. It is probable that, when this does not occur, the system is not so thoroughly protected, as when it does.

7. Recurrence should be had occasionally to the cow for fresh supplies of lymph, especially when that, which is in use, appears to lose some degree of its intensity.

It is to be remembered however, that by far the greater number of experiments, made with lymph procured from the cow, have hitherto failed. Whether this arises from the genuine disease in the cow not having been properly discriminated—(for it would seem that the animal is subject to various anomalous eruptive complaints, like to, but in reality different from, the genuine *Variolæ Vaccinæ*)—or from other causes, cannot well be decided. It is a curious fact that in France, upon *one* occasion only since the first introduction of vaccination, has the genuine lymph been derived from its original source: this occurred about three years ago at Passy, near Paris. Dr. Gregory too, in his last Report of the Small-pox Hospital, alludes to the subject in these words: "We have received indeed from Bristol, Aylesbury, and the North of Scotland, supplies of matter recently taken from the Cow, with which experiments have been made, but as none of them appear to exceed, or even to equal in intensity, the Lymph now in use, it has not been thought advisable to make any alteration. Recurrence to the Cow for fresh Lymph is not a measure lightly to be had recourse to, nor should it be advised until the old and tried stock has obviously degenerated."

The question therefore of the propriety of occasionally renewing our supplies of lymph from its original source requires to be more extensively examined, before we can arrive at any positive conclusions on the subject. Still there is information sufficient to warrant us in recommending the practice

8. In taking lymph from the arm of a vaccinated child, one or two of the vesicles should be left unopened and undisturbed.

9. The protective influence of vaccination against small-pox contagion is only temporary or limited to a certain number of years. It appears to remain almost complete for ten or twelve years; and then progressively to become less and less decided.

10. It is therefore proper to have recourse to Re-vaccination. The effects of this operation vary much in different persons. In some, the punctured wounds only become slightly irritated and then heal up; in others, an imperfect attempt at the formation of pustules takes place; and in a third set, regular normal vaccine vesicles are formed, as after the first operation. Fresh fluid lymph should always be used for re-vaccination.

How far the susceptibility to be affected by re-vaccination is a test or indication of the susceptibility in the person of catching the variolous contagion—a

question certainly of the very highest practical importance—has not yet been determined; although it seems probable that it is so. Dr. Jenner in one of his latest publications, distinctly states, "*if the constitution shews an insusceptibility of the one, it commonly does of the other.*"

11. The number and character of the *cicatrices* on the arm afford no means of judging whether the person is susceptible either of the vaccine or of the variolous inoculation.

12. Almost all the cases of very severe, certainly of fatal, small-pox after proper vaccination have occurred in persons upwards of fifteen or even twenty years of age.

13. No case of small-pox has, according to the German authorities, occurred in any re-vaccinated person.

14. We have no very accurate or sufficiently extensive data to ascertain the average frequency of secondary small-pox, after the natural disease or after inoculation with the variolous virus.

Dr. Baron, in his Life of Jenner, goes so far as to state that the number of cases of secondary small-pox is as great as that of small-pox after *perfect* vaccination. He appeals to a series of observations made at the Royal Military Asylum at Chelsea. From 1803 to 1833, it appears that 5592 children were admitted into that institution; of these 2532 were reported to have had small-pox, and 3060 to have been vaccinated.

The number who had small-pox after reputed small-pox was 26; and the number who had small-pox after vaccination was 24. The number vaccinated at the Asylum subsequent to admission was 628, of which number three only caught the small pox. The number who died of small-pox at the Asylum was four boys and one girl; of these five children, three had the disease after reputed small-pox, and two had neither been vaccinated nor undergone the small-pox before. (See Appendix to Report from Select Committee on the Vaccine Board.)

The statements in this document, if taken by itself, certainly warrant the conclusion which Dr. Baron has deduced; and it would seem to be confirmed by some other observations to which he alludes. Thus in the varioloid epidemic which prevailed in Edinburgh in 1818-1819, a greater number of deaths occurred among those who had formerly suffered from small-pox, than in those who had been vaccinated; and Mr. Cross, in his excellent account of the epidemic at Norwich in 1819, alludes to three cases of fatal secondary small-pox, whereas two only of fatal small-pox after vaccination were heard of. It will be observed also that a statement, made by M. Dezeimeris respecting one of the recent epidemics in Norway, is in accordance with these observations.

Still it is right to bear in mind that we have much need of further authentic data, before we can justly arrive at any sound conclusions on this subject; more especially as we understand that the personal experience of Dr. Gregory is not in conformity with the statement made by Dr. Baron that "vaccination, when duly gone through, does certainly afford as complete immunity from subsequent attacks of small-pox, as that disease itself can do."

The number of cases of secondary variola, whether after inoculation or after the natural disease, which have come under Dr. Gregory's personal observation has been very few—not more than three or four unequivocal cases in all. He is of opinion that in very many reputed instances of secondary small-pox, the disease has been, *the second time*, either varicella, porigo, or lichen varioloides.

15. Almost all the cases of unequivocal secondary small-pox have, according to the statements of some writers, occurred at from twenty to thirty years after the date of the first attack.

16. With respect to the effects of vaccination on persons, who have had the small-pox, it is stated by Dr. Heim of Wurtemburgh, that of 297 such cases, the operation succeeded perfectly in 95, produced modified vesicles in 76, and failed altogether in 126— a proportion not dissimilar to what has been stated in some reports to have been the results of re-vaccination.

Notice of the German Journal *Zeitschrift fur die Gesammte Medicin :* its Contents.

The eighth volume of the above periodical, edited by Drs. Fricke and Oppenheim, was recently sent to us for inspection; and we have been much pleased with the perusal.

It contains several original contributions from Professors Osiander, and Dieffenbach, and from Drs. Ruppius of Freiburg, Dubigk of Berlin, Nathan of Hamburg, Oppenhiem, and Fricke.

The *second* part is occupied with analytic reviews of most of the important medical works, which have, within the last year or two, been published, not only in Germany, but also in Britain, France and Italy; such as Wardrop on Diseases of the Heart, Marshall Hall on the Nervous System, Guy's Hospital Reports, the Medico-Chirurgical Transactions, the Memoirs of the Royal Academy of Medicine at Paris, the Clinique Medicale of Bouillaud, Statistical Researches on Foundlings, Illegitimate Children and Orphans in France and other countries of Europe, by MM. Gaillard, Terme, Montfalcon, and Remache, Clinical History of the Cholera Morbus in Italy, by Drs. Renzi and Rotondo of Naples, &c. &c.

The *third* part comprises numerous valuable notices and extracts from almost all the leading medical journals of Europe, being similar to, but less complete and extensive than, the Periscopic Department of the Medico-Chirurgical Review; and the *concluding* part is occupied with miscellaneous notices, and intelligence about medical books, institutions, and so forth.

Extract from M. Gendrin's Lectures on Diseases of the Heart.

"A vertical line, passing along the articulations of the cartilages of the left ribs with the sternum, represents the anterior edge of a vertical plane, which divides obliquely the heart into two unequal halves. The posterior edge of this plane will be found to correspond with the posterior edge of the inter-ventricular septum; the part of the heart situated to the right of the plane will comprehend the base of the right ventricle, and the right auricle; and the part to the left, will comprehend the inferior part of the right ventricle, the whole of the left ventricle, and also the left auricle.

The pulmonary artery may be considered as the axis of the heart; it springs from the base of this organ; and, passing somewhat upwards and sinistred, it crosses in front of the aorta.

If a horizontal line be drawn along the lower edge of the third rib, and a perpendicular line be then made to cross it, so that it passes over the sternal articulations of the left ribs, the point of intersection will be found very nearly to correspond with the origin of the pulmonary artery; and the horizontal line to indicate the loose edge of the pulmonary and aortic semilunar valves. The point of intersection of a second perpendicular line, drawn about half an inch exteriorly to the former one, points out the left segment of the pulmonary artery.

The aorta, on springing from the heart, passes from behind the pulmonary artery, somewhat to the right side, and reaching the median line, is situated immediately behind or dorsed to the sternum.

If a needle be inserted midway between the second and third sterno-costal articulations, and pushed directly backwards, it will probably be found to pass through the point where the *ductus arteriosus* was given off from the pulmonary artery.

The apex of the heart corresponds—in the recumbent supine position of the body—to the interval between the fourth and fifth sterno-costal articulations, at about an inch and a half from the mesial line of the sternum.

Occasionally the apex of the heart is lower down than what we have now mentioned, and reaches to the interval between the cartilages of the fifth and sixth ribs. In general, it is a little higher up in women than in men.

The point of attachment of the pericardium to the large blood-vessels, which spring from the heart, is on a level with the arch of the aorta and behind the second sterno-costal cartilage. This fibrous sac is fixed inferiorily to the centre of the diaphragm, and extends to the left for about two inches; posteriorly, it rests, in an inclined position, upon the bodies of the sixth and seventh dorsal vertebræ.

We have already stated that a horizontal line, drawn along the inferior edge of the third left rib, corresponds to and indicates the position of the free edges of pulmonary and aortic semi-lunar valves: this line will be found also to pass on the level of the two auriculo-ventricular orifices.

Sounds of the Heart.—The heart is the seat of two principal movements, which follow each other alternately: the movement, which corresponds to the propulsion of the blood from the ventricles into the arteries, is the *systole*; and that, by which the empty ventricles become refilled with blood, constitutes the *diastole*.

These two movements of the heart coincide with two distinct sounds, appreciable by the ear when applied over the precordial region: the first sound corresponding with the systole, and therefore called *systolic*, and the second one with the diastole, and called the *diastolic*.

M. Gendrin subdivides each of these sounds and movements into three periods,—the *pre-systole*, the *systole*, and the *peri-systole*; and the *pre-diastole*, the *diastole*, and the *peri-diastole*—to indicate more exactly the consecutive changes immediately before, during, and after the contraction and dilatation of the ventricles.*

To the alternate movements of the heart are to be attributed not only the coinciding sounds to which we have alluded, but also the phenomena of the arterial pulse. If a finger be applied over the *trajet* of an artery, we perceive a succession of beats, which are isochronous with the systole or contraction of the cardiac ventricles. This isochronism is not however quite perfect, except in those arteries which are very near to the heart; the interval between its systole and the arterial pulse becoming gradually greater and greater, according to the distance of the vessel from the centre of the circulation.

The arterial pulsation corresponds to and indicates the dilatation or diastole of the vessel, during which it becomes not only fuller, but is also somewhat lengthened, and its curvatures are increased.

The shock or force of the pulse is usually proportionate to the systolic impulsation of the heart: it is communicated along *de proche en proche comme par reptation*, becoming feebler as the arteries are more remote from the centre of the circulation. The arteries do not present, in a healthy state, a double beat like the heart. The swell or heaving which they communicate to the finger, is produced by the diastole of the vessel; its systole being unattended with any impulse.

This absence of a systolic impulse is just what we might expect, when we consider that the arterial systole consists only in a return of the vessel to its normal calibre by elastic power of its middle coat. We recognise then in the arteries, as well as in the heart itself, a diastolic and a systolic movement; and we

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* We should deem this sub-division a very unnecessary and perplexing attempt at refinement.—*Rev.*

divide each of these movements into three periods, which we designate by the terms arterial *pre-diastole*, *diastole* and *peri-diastole*, and arterial *pre-systole*, *systole*, and *peri-systole*."—*Journal des Connoiss. Medic.*

OPENING BETWEEN THE VENTRICLES OF THE HEART IN AN ADULT, WITHOUT ANY SYMPTOMS OF MORBUS CŒRULEUS.

A shoe-maker 26 years of age and of a weak lymphatic constitution, had been subject to palpitations of the heart from his infancy, and had twice suffered from attacks of acute rheumatism. His present attack is pneumonia on the left side, the pericardium being probably affected at the same time. The attack proved fatal.

Dissection.—There were old and firm adhesions between the left pleuræ; the lung too, on this side, was partially hepatised and tuberculated.

On opening the pericardium, about two spoonfuls of serosity were found within. The heart was extremely large and hypertrophied, and was coated with patches of albuminous deposit on its outer surface. All the cavities and orifices were very wide and open. On carefully examining the ventricles, it was found that there was an opening immediately under the mitral and tricuspid valves, between the left and right sides. It was about an inch in diameter, with smooth and rounded edges,—indicating that it was an old formation. It was almost quite plugged up with the yellow coagulum, so frequently found after death within the heart. The *foramen ovale* was perfectly closed.

Remarks.—Cases similar to the preceding have been observed by Richerand and Meckel in persons of 40 and even 60 years of age.

MM. Louis and Bouillaud very justly remark, that in cases, where an abnormal communication exists between the two sides of the heart, either in the auricles or in the ventricles, there is often little or no cardiac distress, *provided* there be no contraction of any of the natural openings, or thickening or other lesion of the valves, to obstruct the free egress of the cavity from the different cavities.

The patency of the *foramen ovale* in adults, who perhaps have never suffered from heart disease, is well known to all pathologists. If, however, any disorder accompanied with difficulty of respiration, such as pneumonia, bronchitis, &c. supervene, such patients are very apt to sink, often quite unexpectedly, under the attack. It is a good rule therefore in practice, always to watch with double care any chest complaints in persons, who have been subject to palpitations or other disorder of the heart.—*L'Experience*, Jan. 1838.

CYANOSIS; ORIGIN OF THE AORTA FROM THE RIGHT VENTRICLE, &C.

An infant, who had exhibited in a very marked degree the symptoms of *morbus cæruleus*, died in the second week after birth.

Dissection. The cerebral vessels were extremely gorged with blood; the lungs also were very highly congested, and did not crepitate firmly on pressure. The heart was very large, and shaped somewhat like that of the turtle. The right ventricle was highly muscular; from this cavity the aorta, as well as the pulmonary artery, was found to arise. The latter vessel, however, was nearly closed up; and no trace of the ductus arterious was visible.

The left ventricle was atrophied, and exhibited no appearance of aortic opening or of mitral valve. In the *sentum cordis* there was a large round aperture, which

permitted a very free communication between the two ventricles.—*Archives Generales.*

IRREGULARITIES OF THE SUBCLAVIAN ARTERY AND VEIN.

The following case will illustrate what unexpected difficulties may arise in a case, where it is necessary to tie the subclavian artery.

A soldier received a stab in the axilla; a profuse hæmorrhage followed; and, although it seemed to be checked by pressure, Professor Dubreil did not hesitate at once to proceed to tie the subclavian artery. After the necessary incisions had been made, he felt for the tubercle of the first rib, and expected to find the artery where it emerges from between the *scaleni* muscles. But instead of the artery, the subclavian vein was in its place; and, as the wound was constantly filled with dark blood, he found it impracticable to search for the artery. He therefore determined, without loss of time, at once to tie the axillary artery between the deltoid and pectoral muscles. The patient died on the following day.

Dissection. On examining the wound it was found that the brachial artery, close to the point of its origin, had been penetrated. The ligature included the axillary artery alone, and none of the nerves were in any way injured. On tracing the subclavian vessels, the vein was found occupying the usual position of the artery between the anterior and middle *scaleni* muscles: it (the latter) was situated somewhat in front of and above the nerves, and was not easily exposed even in the dead subject. The distribution of the vessels on the left side was altogether normal.

The arterial irregularity, observed in the preceding case, has been noticed by several surgeons. Thus Velpeau and Blandin mention a case where the subclavian vein accompanied the artery between the *scaleni* muscles' Cruveilhier found both vessels situated in front of the *anterior scalenus* muscle, and in another case the *middle scalenus* passed between and separated the leash of the axillary nerves. Many other cases might be alluded to; but this is unnecessary.

The operating surgeon cannot be too well acquainted with all these irregularities in the distribution and relative arrangement of the great vascular trunks. —*Gazette Medicale.*

PROFESSOR DIEFFENBACH ON THE ORTHOPÆDIC ESTABLISHMENTS IN PARIS.

The great progress, which Orthopædy has made of late years in France, has attracted the attention of most recent professional visitors to Paris. Indeed, after lithotrity, the treatment of deformities and contractions has become quite a favourite subject with many of the leading surgeons in that metropolis. Not many years ago, the management of such cases was not deemed worthy of the surgeon's attention; and it was therefore left to corset makers, and to others equally as uninformed, to do the best that they could to rectify, or at all events to conceal, the deformity. But now there are regular establishments, conducted by most able and intelligent men of education, in the neighbourhood of Paris, to which resort, from all parts of France, an immense number of persons who are afflicted with curvatures of the spine, contractions of the limbs and such-like maladies. The most celebrated of these are situated at Passy, a beautiful village in the immediate neighbourhood of Paris, and belong to M. Guerin, and to M. Bouvier. Both institutions are conducted with amirable skill, and afford to the invalids, every advantage which the ingenuity and experience of these gentlemen can afford. The arrangements for gymnastic exercises, for the use of extending machinery and bandages, for the improvement of the general health of

the patients, and at the same time for the recreation and instruction of the mind, are most complete in every particular.

In cases of curved spine, the extension is affected by means of a peculiarly constructed bed to which the patient is secured, and the length of which may then be increased or diminished as the surgeon may require. The one used and recommended by M. Guerin consists of four different segments or smaller beds, which can be separated from each other or screwed together at pleasure. By moving one or more of the pieces to either side, after the patients has been secured by the patient and straps, a certain lateral direction may be given to the extending force, so as to draw the spine either to the right or to the left hand, according to the inclination of the curvature. The peculiarity of M. Guerin's extending bed is its being composed of several distinct pieces. The entire establishment of this gentleman at Passy deserves the highest praise. The great Monthyon prize was some years ago awarded to him by the Royal Academy at Paris, for the various improvements which he had introduced into the scientific practice of Orthopædy. His museum contains numerous specimens of comparative as well as human anatomy, and also a most instructive collection of Paris-plaster casts of the various forms of distortion and irregularity of the spine and joints, at various periods of their treatment.

The employment of gymnastic exercises holds a prominent place in the Orthopædic practice of M. Guerin. In the great hall of his establishment are to be seen all sorts of machines and apparatuses for the use of the inmates. Swimming and other exercises, in which the body lies as in swimming, are particularly recommended both by M. Guerin and by M. Bouvier. Another exercise, which is very generally practised by young invalids, is going on tall crutches. "I was," says Professor Dieffenbach, "quite astonished, upon entering the gardens, to see a number of French girls moving about with surprising agility on tall crutches, like so many kangaroos with their short arms and long legs." The staves of the crutches are very tall, so that when the invalids stop, their feet do not touch the ground, but are suspended, *schwebend in der luft*, half an ell above it, and the body is supported by the arms.

Professor Dieffenbach seems to approve of this mode of exercise, and recommends it to his countrymen for imitation. He mentions with praise the collection of casts and other illustrative preparations in the museum of M. Bouvier, and alludes in particular to one cast, which M. Bouvier directed his attention to, as being quite "une moule historique." Its history is rather curious and may be instructive as well as interesting to the reader.

An orthopædist of some eminence in Paris announced, some time ago, to the Institute of France, that he had discovered a method of removing curvatures of the spine in a very short period of time; and, with the view of convincing the members of the truth of his claim, he brought before their notice a young woman in whom there was a very marked irregularity of the spine, which he undertook to rectify in the course of a few weeks. A commission was appointed to investigate the subject; Paris-plaster casts were taken of the patient's back; and every other means to arrive at the truth were adopted.

Within a very short time, the girl was again presented before the Institute, and now not the slightest trace of deformity was visible. The commissioners were quite satisfied of the identity of the individual, and could not help expressing their astonishment at the extraordinary rapidity of the cure; it seemed to them quite miraculous, M. Guerin however suspected that there must be some deception, and that the case was in all probability one of simulation.

He soon convinced the commissioners of the truth of his suspicions, by proving to them, that although the line of the spinal column seemed to be quite as much deformed in the simulated as in the genuine case of the disease, the muscles of the back were at the same time dislocated in the latter, but not in the former, instance. By attending therefore to the condition of the spinal muscles in a sus-

pected case, we may generally detect when a fraud is attempted to be played upon our judgment.

The zeal, with which M. Guerin exposed the impudence of the above trick, so irritated the imposter that he brought an action at law against his adversary; and, although all right and equity were on the side of M. Guerin, he was amerced in a heavy penalty for the injury he had done to the plaintiff's character.

Professor Dieffenbach pays a high compliment of admiration to M. Bouvier for the pleasure and instruction he had received from visiting his orthopædic establishment; and he alludes with great satisfaction to his having met there some of the ablest professional men in Paris, such as the two Larreys, father and son, Marjollin, Le-roy, and many others. The second prize of 2000 francs has been awarded by the Institute to M. Bouvier for the various improvements which he has introduced.

For some time past, he has had the charge of all cases of deformity in the Hôtel Dieu, and also in the Hôpital des Enfans Malades; and at these two great institutions the medical students have an opportunity of acquiring a scientific knowledge of Orthopædy.

Besides the establishment noticed above, there has been for some time a sort of ambulatory infirmary for the treatment of deformities, in Paris; this is under the management of MM. Bouvier and Duval. At a stated hour each day a great number of cases, among children chiefly, come for advice, bandages, and so forth—all which are given gratuitously.

M. Duval attends to the cases of club-foot, and M. Bouvier to those of spinal deformity. In lateral curvatures of the back anong the poor, and those who cannot be treated at home with the extending bed, M. Bouvier employs the girdle or cincture invented by M. Hossard (ceinture à levier ou inclinatoire), by means of which the depressed shoulder is elevated, and the spine is inclined somewhat over to the side opposite to that of the curvature.

Many of the cases of club-foot are treated by section of the tendo-Achillis, as recommended by M. Stromeyer.—*Zeitschrift fur die ges: Med.*

CONCOURS FOR THE CHAIR OF ORGANIC CHEMISTRY AT PARIS.

The following brief notice of the *tests* to which the rival candidates *were submitted*, at the late *concours* for the chair of organic chemistry and pharmacology will possibly be interesting to the English reader. The election by *concours* may, we will allow, be attended with some disadvantages, as it has been often remarked that professional and scientific men are generally the least impartial judges of professional and scientific merit; but that there are corresponding and, we may add, ever balancing benefits from its adoption, cannot be well disputed.

The *first* examination was altogether occupied with the preparing of a written thesis upon the organic alkalis.

At the *second* examination, the candidates had to discourse orally, after twenty-four hours' preparation, upon a given subject. M. Baudrimont upon the chemical and pharmaceutical relations of alcohol; M. Bouchardat upon those of the essential oils; M. Bussy upon those of adipose and fatty matters; and M. Dumas upon those of sugar.

At the *third* examination—which also was an oral one, after two hours, preparation, upon a subject determined by lot—MM. Baudrimont and Bouchardat had to treat of the properties of albumen and gelatine, and MM Bussy and Dumas upon those of milk.

At the *fourth* and last examination, the candidates were required to defend their respective printed theses. Bussy on the urine and its changes in diseases; M. Dumas upon the influence of heat on organic bodies, and its employ-

ment in pharmaceutical preparations; M. Bouchardat on the blood; and M. Baudrimont on the present state of organic chemistry.

Each candidate gave convincing proof of great knowledge and acquirements; but as the superiority of M. Dumas was aknowledged by all, he was unanimously elected to the professional chair.

Treatment of Diptherite, or Croupy Inflammation of the Mouth.

Dr. Ruppius, of Freiburg, very justly remarks, that the morbid action or process in this disease—first accurately described by M. Bretonneau of Tours—is essentially the same as characterises the well-known disease of *Croup* or *Cynanche Trachealis*. In both, the inflammation of the affected mucous tissue has a very marked tendency to cause an exsudation of a membraniform lymph on its surface: in the one, this phenomenon is usually limited to the trachea aud lower part of the larynx; while in the other, it is observed chiefly on the velum palati, the tonsils, and back parts of the fauces.

Diptherite usually commences with the ordinary spmptoms of *Cynanche*. There is some difficulty experienced in deglutition, arising from the swelling of the tonsils; the act of inspiration is attended with a slight snoring noise; the voice becomes sharper and shriller; and the system is generally more or less feverish. If the fauces be examined, the surface, especially that of the tonsils and uvula, is observed to be of a purplish red colour.

When the exsudation commences, a troublesome cough is apt to come on, the breathing becomes more and more difficult, and the patient is more restless and agitated. If the morbid action extends to the opening of the larynx, the symptoms, become much more alarming, and the local distress assumes much the same character as is present in croup. Such cases usually prove fatal.

The treatment of this disease is to be conducted on the same principles as that of croup—bloodletting, local and general, in the early stages, and the use of calomel and of antimonials in such doses as to make an impression on the system. Along with the adoption of these means, Dr. Ruppius strongly recommends the local application of the nitrate of silver to all the parts of the fauces, which are not invested with the exsuded lymph. The marked efficacy of this treatment, in arresting and in modifying the morbid action, is often very gratifying. There is no objection to the applying the nitrate to the parts which are covered with the lymph; but it seems to be generally useless.—*Zeitschrift fur die ges. Med.*

Professor Osiander on Puerperal Fever.

Professor Osiander premises his remarks, by observing, that the term 'Puerperal or Child-bed Fever,'—although not scientific, nor consonant to the nomenclature of other febrile diseases—cannot be well replaced by any other which has been proposed, such as *peritonitis puerperalis*, *metro-peritonitis*, &c. The peritoneum and the uterus may be quite free from inflammation, and yet the patient may die from puerperal fever.

Often the disease commences as an attack of meningitis, or of erysipelas, or of rheumatic swelling of the joints, &c. and, under any of these forms, it speedily proves as dangerous and alarming as when the uterus and peritoneum are primarily affected. For this reason, Professor Osiander prefers to retain the old generic term of Puerperal fever, and of distinguishing its various species or forms in the following manner, according to seat and character of the predominant local mischief.

1. Puerperal fever with peritonitis.
2. .. .. .. hysteritis and peritonitis.
3. .. .. .. meningitis.
4. .. .. .. pneumonia.
5. .. .. .. miliary fever.
6. .. .. .. erysipelas.
7. .. .. .. arthritic swelling.
8. .. .. .. milk abscess.
9. .. .. .. gangrenous inflammation of the external and internal generative organs, (metritis gangrenosa).
10. .. .. .. typhus fever.

The last-mentioned variety includes, according to this tabular arrangement, all those cases of child-bed fever, in which there is a suppurative inflammation of the uterine and adjacent veins. It is by far the most formidable variety of the disease, and is that which usually prevails epidemically at certain seasons, more especially in large institutions. To apply the term *peritonitis* or *metro-peritonitis* to it, is not only quite incorrect—seeing that often no genuine traces of peritoneal inflammation are discoverable on dissection—but is likewise most seriously hurtful, in consequence of the erroneous treatment which will necessarily be recommended.

An impure condition of the atmosphere—attributable very often to an overcrowded state of the wards in a lying-in establishment—is unquestionably one of the most frequent causes of puerperal typhus. That this form of the disease is of a miasmatic origin, and is communicable from one patient to another, cannot be well disputed; and it therefore becomes the duty of the physician and nurse to use all precautionary means to prevent the dissemination of the miasm, by changing their own garments frequently, washing their hands, &c. as well as by the employment of fumigations and other well-known means.

Much may be done in the way of *propyhlaxis* of this disease, but very little in the *treatment* of it, when it is once fairly established. There is perhaps no form of fever so little under the control of medicine as puerperal fever; it is only in the precursory and very early stages of the disease that the healing art can be of any avail.

According to the researches of Osiander, inflammation and suppuration of the uterine veins is by no means so generally present, as some authors might lead us to suppose.

Inflammation of the lymphatic vessels seems to be of much more frequent occurrence when the peritoneum has been inflamed, than phlebitis of the uterine veins.

The latter is however by far the most serious affection of the two. Abscesses of the liver, of the lungs, and of the muscles and joints, are not uncommon sequelæ of uterine phlebitis, when the patient has survived the early stage of the disease.

The follwing few cases illustrate some of the most generally observed characters of puerperal typhus.

CASE 1.—*Puerperal Tyhus, fatal, in 24 hours, with Peritonitis, and Suppuration in the Uterine Lymphatics.*

A woman, 27 years of age, was delivered in the Maternité Hospital, at a time when child-bed fever was very prevalent. For three days subsequently she went on very well; but, on the fourth day, she began to complain of pain in the hypogastric region. The pulse, at this time, was frequent, but not full or hard; and the patient was troubled with diarrhœa and tendency to vomiting. *An unfavourable prognosis was formed, in consequence of the great frequency*

of the pulse. Thirty leeches were applied to the abdomen, and an ipecacuan emetic was administered; an ounce of mercurial ointment was rubbed in upon the inside of the thighs, and a sinapised hip-bath was used.

In the evening, the abdominal pain was less severe, but the pulse was still rapid and small: the diarrhœa and nausea continued.

Next day, the abdomen was tympanitic, and very painful; the breathing was hurried and uneasy; but there was no delirium, or mental confusion. Sinapisms and friction with the mercurial ointment were continued; but the patient died in the course of the night.

Dissection. The abdomen was found to contain a quantity of muddy serum, blended with numerous flocculi of albuminous matter—the result, no doubt, of peritoneal inflammation. Beneath the peritoneum, in the left iliac fossa, there was a purulent infiltration into the cellular tissue: this extended upwards as high as the kidney. The lymphatic vessels of the broad ligaments were filled with pus; but the uterine veins seemed to be entirely sound.

CASE 2.—*Puerperal Typhus, with Suppurative Inflammation in the Sub-peritoneal Cellular Substance, and in the Uterine Lymphatics.*

A woman was seized, on the second evening after a fortunate delivery, with shivering and abominal pain. Upwards of fifty leechcs were applied on the hypogastrium; and fomentations and other means were used. But on the following day the patient was moribund, and she died in the course of the evening; the abdomen had become exceedingly inflated.

Dissection.—The abdominal cavity contained some reddish-coloured serum; and between the uterus and rectum a small quantity of consistent pus was found. In the region of the cæcum some purulent matter existed behind the peritoneum. The lymphatic vessels, which accompany the spermatic veins, were full of matter.

Remarks. We are inclined to believe that the inflammation must have, in this case, commenced previously to delivery.

CASE 3—*Puerperal Typhus fatal in fifteen hours after Delivery; Peritonitis and Suppuration of the Lymphatics; softening and Malanosis of the Lungs.*

A young woman was admitted, in the eighth month of her pregnancy, into the Lying-in Hospital on the 17th of June, at a time when the child-bed fever was very prevalent. On the third day afterwards, she experienced abdominal pain, and feverish excitement.

On the 25th, she was delivered of a dead child; and, on the following day, she died.

Dissection.—The abdomen contained a large quantity of white matter; and the lymphatic vessels on the sides of the uterus were filled with pus. The inferior lobe of the left lung was softened, and of a black colour.

CASE 4.— *Puerperal Typhus, fatal in 50 hours; Peritonitis, and Suppuration of the Lymphatics.*

A middle-aged woman was seized, on the evening after her confinement, with shivering. Next morning, she had abdominal pains; the pulse was exceedingly quickened, and very easily compressed; there was slight diarrhœa; the lochia were not much affected. *Osiander* formed a very unfavourable prognosis of the case, in consequence of the extreme rapidity and feebleness of the pulse: he had not seen one patient recover in whom this state of the circulation existed. As he had found evil only to result from sanguineous depletion in any form, and from the use of emetics, as recommended by some physicians, he contented himself with recommending the application of poultices to the abdomen, and of camphor ointment around the pubes and to the thighs, and of warm injections into the vagina. By the use of these means, the patient was somewhat easier towards

evening. Next day the abdominal pain was gone, and the pulse was not quite so rapid: five grains of ipecacuan were ordered to be given every four or five hours; and the warm-baths were to be continued.

But soon afterwards she became gradually worse, and she died 68 hours after delivery, and about 50 after the commencement of the feverish symptoms.

Dissection.—The abdomen contained some purulent serosity; and pus was found in the uterine lymphatics, in the Fallopian tubes, and in the cellular tissue of the pelvis.

General Reflections.—Professor Osiander closes his memoir with a few remarks on the probable exciting, or predisposing, causes of child-bed fever. He insists particularly on the pernicious influence of cold air on women in the puerperal state; and he attributes the lamentable frequency and fatality of the disease, in the large lying-in institutions in Paris and Vienna, to the continual ventilation of the wards.

He mentions, that whereas it is almost constantly more or less prevalent in these hospitals, it is comparatively rare in the Maternité at Gottingen, whose wards are small, never crowded, and uniformly kept in a state of pleasant warmth. He is therefore of opinion that, if in lying-in establishments more attention was paid to the warming of the wards, and to avoid the crowding of many patients together, the epidemics of puerperal fever would be much less frequent and fatal.

He has never seen any good effects from the administration of calomel and active purgatives in this disease. He recommends the use of saline and tonic medicines; and he mentions that the application of large mustard poultices to the mammæ—so as to excite a powerful revulsion from the uterus—has in several cases seemed to act more beneficially than any other means, which he has employed.—*Zeitschrift fur die ges. Med.*

CLINIQUE OF M. BRICHETEAU AT THE HÔPITAL NECKER.

CASE. 1.—*Typhus—Sudden Death—Softening and incomplete Perforation of the Stomach.*—A girl, 17 years of age, was admitted into the Hôpital Necker on the 12th of April, with symptoms of typhus fever.

On the third day after her admission, while she was under a course of laxative medicines, she was seized with a sharp pain in the abdomen, in consequence of which the medicines were discontinued. The pain ceased by the application of leeches; but soon afterwards, this remission was followed by furious delirium, and this by stupor and ultimately complete coma; which—notwithstanding the use of blisters, ice to the head, sedatives, &c.—continued till she died on the sixth day.

Dissection.—The *brain* was slightly and only partially congested. The *lungs* and the *heart* seemed to be healthy. The mucous membrane of the *stomach* was softened and *worn-away*, as it were, to its peritoneal coat, in the neighbourhood of the cardiac orifice. Even the peritoneal coat was *usé;* for it had become as thin as gauze-paper. but this slight thickness had proved sufficient to prevent abdominal extravasation.

Remarks.—M. Bricheteau confessed his great surprise at the phenomena of the preceeding case. From the violence of the cerebral symptoms he had prognosticated the presence of meningitis, and had expected to find upon dissection very decided marks of inflammatory action. Judge then of my surprise, he said, at finding the encephalon almost quite healthy.

The lesion too, of the stomach, was equally unlooked for. That it must have existed for a length of time, before the girl's health was at all affected, is more

than probable. We see here an apt proof of a position, which ought to be well remembered by every medical man—*that serious organic mischief may exist without being attended with any disturbance of the health.* In the present case there had been no epigastric suffering until the attack of pain, after the admission of the patient into the hospital.

Are we to attribute the cerebral symptoms to sympathy with the morbid state of the stomach? This is a question most difficult to answer; and indeed the case altogether is a very puzzling one. The majority of the symptoms indicated a lesion of the encephalon; and yet the pathological changes existed altogether in the stomach.*

Case 2.—*Epilepsy; Sudden Death during a Paroxysm; Attenuation of the Membranes and Perforation of the Stomach.*

A young woman, of a very corpulent frame, was brought to the hospital while under an attack of epilepsy. The fits returned upwards of twenty times in the course of the day, and were followed by a profound coma, the precursor of death. The patient was *enceinte* for the first time; and it was stated that chagrin, from having been cruelly deserted, had probably been the cause of the attack.

Dissection.—The substance of the brain was found somewhat softened. A dark-coloured and rather fætid fluid was found effused within the abdominal cavity; but the viscera did not seem to be inflamed: the fluid had escaped from numerous perforations in the great *cul-de-sac* of the stomach. The perforations, when examined, presented the aspect of having been made with an *emporte-piéce*, and exhibited no traces of inflammation on their edges. The mucous membrane of the stomach was much softened and attenuated; and here and there it seemed to be entirely wanting. The uterus contained a well-formed fœtus, six months old.

Remarks.—Two opinions as to the cause of the perforations of the stomach were entertained. Some attributed them to the corroding action of the dark fluid which we have spoken of, while M. Bricheteau considered it more probable that the violent contractions of the stomach during the epileptic paroxysm had induced a rupture of its coasts, and that this lesion was the cause of the death. That the death had been sudden was apparent from the entire absence of all inflammatory signs on the abdominal viscera.

A third opinion might be hazarded on this subject; for we might suppose that the perforations in the stomach were *post-mortem* phenomena. The experiments of Dr. Carswell of London have clearly shewed how often such a cadaveric lesion occurs in the lower animals, that have been suddenly killed.—*La Lancette Francaise.*

Use of Caustic Issues in Phthisis Pulmonalis.

M. Bricheteau has for some years past been in the habit of using, with very decided advantage, caustic issues, formed immediately below one or both clavicles, in cases of pulmonary consumption; even when the disease is far advanced, and auscultation has indicated the existence of tuberculous caverns in the lungs. That a powerful local derivative, like an issue, may have a decided influence in

* The cerebral symptoms are doubtless to be regarded as part of the phenomena of the existing typhus fever, and cannot well be attributed to the mere sympathy of the brain with the stomach. The absence of necroscopic changes in such cases is not of unfrequent occurrence.—*Rev.*

arresting at least the progress of morbid action, however serious, in an internal viscus, is well known to every medical man; and that in many cases it has this effect on the softening and ulceration of tuberculated lungs cannot, in M. Bricheteau's opinion, be gainsayed by any unprejudiced observer of his practice at the Hôpital Necker. Even where an absolute cure is not obtained, a great mitigation, and often a marked retardation, of the disease follows the establishment of caustic issues below the clavicles—provided always the rest of the treatment be at the same time judicious and appropriate.

We shall very briefly mention the histories of two cases recently treated in the hospital.

A young married woman was admitted in the following state on the 6th of June, 1837.

She was distressed with cough, puriform expectoration, copious sweats, and vomiting after the fits of coughing: there was a sharp stitchy pain felt over the right side of the chest. On examining the chest with the stethoscope a distinct gurgling sound was audible beneath the right clavicle; the respiration was cavernous behind; and these two symptoms became more *prononcés*, when the patient coughed; there was considerable dulness on percussion beneath the right clavicle. The patient was so weak that she could not walk about.

A large caustic issue was established immediately under the right clavicle, and demulcent medicines and diet were prescribed.

This treatment was persevered in for six or seven weeks; and by that time most of the unfavourable symptoms had disappeared, and the woman began to recover her flesh and strength. Ultimately she did well.

Case 2.—A middle-aged woman had, after repeated attacks of hemoptysis, become affected with all the usual symptoms of pulmonary consumption—cough, copious puriform expectoration, night sweats, and diarrhœa. She was considered by the physicians of La Charité hospital to be decidedly phthisical. Under the use of a large caustic issue beneath the right clavicle, and appropriate attention to the most troublesome existing symptoms, this woman regained her health so well, that in the course of two months she was able to leave the hospital, and soon after resumed her occupation of a washerwoman.

At a subsequent period this woman was admitted for a syphilitic affection. Her pulmonary symptoms had not returned. On auscultating the chest, the respiratory murmur was found to be very feeble under the right clavicle, and there was considerable dulness on percussion over that point. Posteriorly the sounds indicated the adhesion of the pulmonary pleura to the ribs.

Remarks.—The treatment recommended by M. Bricheteau—who is by no means, like some of his *confreres* in the French metropolis, a quick thinker and a rapid writer—is judicious, and deserves to be more generally tried than it has been.

The use of caustic issues in arresting deep-seated organic mischief is perhaps the most efficacious of all remedies, provided always an appropriate constitutional treatment is followed out at the same time. We have reason to believe that the remedial powers of iodine in the *early* stages of tuberculous disease have not been sufficiently appreciated. We speak not of Sir C. Scudamore's plan of inhalation, which is of very quesionably utility, but of the internal administration of some of the milder salts of iodine in combination with vegetable bitters and demulcents.

Let it not be supposed that we are one of the believers in the *curability of consumption*, in the sense that some unprincipled members of the profession make a public parade of. We only wish to remind our readars that tuberculous, like every other morbid, formation is capable, in many instances, of being arrested

or retarded in its progress; and that it is quite possible that Nature will, under these circumstances, sometimes effect a pemanent cure.—*Rev.*

M. Bricheteau on Typhus Fever.

M. Bricheteau commences his remarks by observing that no disease exhibits so many and so important different shades or types as Typhus; and therefore, that no single description, and no exclusive system of treatment, can possibly be universally applicable. Almost every epidemic has some peculiar features which modify the generic character of the disease, and which must necessarily influence the treatment by the unprejudiced physician. It is needless to tell us that all Typhoid fevers have their primary seat in a morbid state of the intestinal mucous follicles. This doctrine may, or it may not, be strictly true; we (M. Bricheteau) are rather inclined to assent to it. But however this may be, every one, who is acquainted with the history of past, and with the characters of recent, epidemics of typhus fever, will admit that at different seasons and in different places the disease exhibits very different phenomena, and requires very different remedies.

In one epidemic, the fever is almost uniformly petechial; in another, it is accompanied with vomiting and diarrhœa; in a third it is complicated with bronchitic symptoms; and in a fourth with *ataxia* and extreme disorder of the nervous system.

There cannot be doubt that the disease, as we have observed it of late years, is considerably different from that which came under the notice of Pinel, Petit, Corvisart, &c.

The conclusion is therefore forced upon us that Typhus—and we add other forms of—fever, without being precisely altered in its essential nature, exhibits, at certain periods, very marked modifications, of character, and requires very different, nay opposite modes of treatment; and all this quite independently of such differences as are attributable to peculiarity of coustitution, mode of living, general state of health, the influence of remedies, and so forth.

This most important maxim was forcibly insisted upon by Sydenham who, in his work on acute diseases, most distinctly states that epidemics of continued fever, although resembling each other in respect to many of their symptoms and general characters, are often very different from each other; for a mode of treatment, which is useful in one, may be decidedly pernicious in another.

How then can any unprejudiced physician persist in recommending any exclusive or universal mode of treatment? Yet such is the case, even in the present day; and perhaps nowhere more dogmatically and more absolutely than in this great metropolis (Paris).

The purgative treatment is that which M. Bricheteau generally adopts, and which—allowing for individual as well as for climatic differences—he decidedly prefers to any other. Not only are the bowels thus relieved from all acrid offending matters, such as bile, mucosities, and fœculent matter, but there is also, at the same time, a powerful derivative action induced on the cerebral and thoracic organs.

The beneficial action of purgatives in typhoid fever has been explained in three different ways;—by modifying, after the manner of other contra-stimulants in cases of angina, apthæ, ophthalmia, and chronic exanthemata, the mucous membrane of the bowels and the follicular glands—by simply evacuating from the bowels all offending and acrid matters, such as bile, mucosity, and fæces—or, lastly, by acting indirectly upon the circulating fluid, in consequence of the discharge of the serum, and perhaps also of any noxious miasmatic matters introduced into the system, along with the intestinal evacuations.

M. Bricheteau is inclined to adopt the first of these opinions; and M. Bouillaud seems to favour the last.

But in whatever manner we choose to explain the action of purgatives in typhus fever, there cannot be a doubt, says the former of these gentlemen, that they are very often highly useful in cases, the symptoms of which might seem to contra-indicate their use—for example, when the tongue is hot and dry, the epigastrium and abdomen tender and painful, the skin parched, and the thirst and fever intense.* In very severe cases, however, where we have reason to suppose that the intestinal ulcerations are far advanced, and in which, therefore, we have to fear the occurrence of perforation of the bowels and the subsequent discharge of their contents into the abdomen, the use of purgative ought probably to be abstained from; or, at least, to be adopted with extreme caution.† M. Bricheteau is quite opposed to the system of repeated bloodlettings so perseveringly insisted upon by M. Bouillaud.

As an appropriate pendant to these remarks on typhus fever, we shall now relate two very remarkable cases of a *hæmorrhagic diathesis*, arising probably from a dissolved state of the blood, such as occurs in certain forms of putrid fever.

Case 1.—A mason, 21 years of age, had but imperfectly recovered from an attack of typhus fever, when he was admitted into the Hôpital Necker. He was extremely weak, had a troublesome cough, and flying pains in different parts of the body; the abdomen was tense and uneasy; the bowels were confined; and the system was feverish.

His face became puffy and lived; the eyelids were infiltrated, and the conjunctivæ exsuded blood. From the mouth also there was a sanguineous exsudation; and several coagula were evacuated from the bowels. He rapidly sunk, and died.

Dissection.—About three glassfuls of bloody serum were found in the abdominal cavity. The internal surface of the bowels was healthy as low down as the neighbourhood of the ileo-cæcal valve, where there were observed several elliptic spot (plaques), the effects of previous ulcerative inflammation.

The pleuræ, and also the pericardium, contained a quantity of sanguineous fluid. The heart was sound; but there was no blood in any of its cavities. The tissue of the lungs was very soft and lacerable.

The serous membrane of the brain contained in its meshes a quantity of gelatinous, partially coagulated, bloody fluid; and blood was found within the cerebral ventricles. The substance of the brain was exceedingly soft. Blood was found within the knee-joints, and also within the tunica vaginalis. The other serous cavities were not opened.

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* M. Bricheteau seems, in this passage, anxious to expose the errors of the Broussaian school; one of the tenets of which has been to eschew the use of purgatives in typhus fever.

† M. Bricheteau closes his remarks on the treatment of typhus, without even adverting to the use of any other remedies except purgatives. Such is the besetting sin of all *doctrinaires* in our profession: they form theories, and on these they build their practice. Are saline diaphoretics and refrigerants of no utility? are emetics never serviceable? is cold or tepid spunging of the surface of no avail? and is it not necessary in many cases to have recourse, even from the first, to stimulants, as wine, brandy, and ammonia? If the typhus fever of Paris is at all like that which we see in London, we have little hesitation in saying that neither the purgative, nor any other, plan of medication is suited to all cases of the disease; the treatment must be varied, according to the peculiarity of each patient's constitution, as well as of the prevailing type of the epidemic. —(*Rev.*)

Case 2.—A labouring man died, after being a few days ill, with all the symptoms of hæmorrhagic Purpura.

Dissection.—The peritoneum and also the pleuræ were spotted over with numerous petechiæ; and in many places, where there is much cellular substance, there were immense ecchymoses.

About six ounces of blood, mixed with a small quantity of serum, were found in the left pleura. Both lungs were partially infiltrated with blood. The pericardium, and also the surface of the heart, was spotted with ecchymoses: the tissue of the latter was remarkably soft, and very easily torn. The inner surface of the stomach was here and there ecchymosed; and was so little consistent, that it might be scraped off with the back of the scalpel. Almost the whole extent of the intestinal mucous surface was in a similar condition. The substance of the spleen, and also of many of the muscles of the body, was soft and gorged with blood.

The head was not opened.

M. Bricheteau says, that he is inclined to attribute such cases, as the preceding, rather to a primary affection of the solids, which diminishes their normal adhesion and resistence, than to any degeneration of the blood.—*La Lancette Fraincaise.*

CANTHARIDES PROVED TO BE A CONTRA-STIMULANT, OR ANTIPHLOGISTIC REMEDY: ITS DEPRESSING ACTION ON THE HEART, &C.: ITS GREAT UTILITY IN INFLAMMATORY DISEASES.

The following *really* practical observations are exceedingly interesting, and well deserve the notice of medical men. Most readers will probably be surprized at first with some of the positions: but as they profess to be drawn from, and based on, actual experiments, both in health and in disease, we must not allow our *British* prejudices to blind our judgments.

Without any further premise, we shall now give the substance of the paper by Dr. Giocomini—one of the physicians of the hospital at *Padua*—and leave our readers to judge of its value for themselves.—(*Rev.*)

First Series of Experiments.

Nine medical students took, each, a pill, containing one grain of powdered cantharides, at eight o'clock in the morning.

In the course of two hours, the pulse in every one of them had fallen in frequency—from two to fourteen beats in the minute. In five the urinary secretion was increased.

A second pill was now taken: and again another at noon. All of them now complained of heat in passing their urine, which continued to be very abundant, and of general weakness and tendency to profuse perspiration, although the weather was not hot. Some suffered from colic pains, tenesmus, and a troublesome itching about the anus. In all, the pulse continued to be considerably under the natural standard. None of them slept soundly during the following night, in consequence of the heat in the urethra, and the prostration of the system; but, by the next morning, they had all recovered from the effects of the medicine. One, who had for some time been annoyed with chronic ophthalmia, found himself entirely relieved from it.

Second Series of Experiments.

To each of seven youths a pill, containing a grain and a half of the cantharides, was given. Two hours afterwards, the pulse, in five of them, had fallen from five to fifteen beats in the minute; in the remaining two, the pulse was quickened by two beats, but was considerably softer than it had been. Another

pill was now given; and a third at noon. At three o'clock, the pulse in all had become slower than before; all complained of extreme exhaustion and of copious perspiration: two only suffered from urinary distress, the rest having drunk very freely of mucilaginous drinks during the day. Next day, all the symptoms induced had passed away, with the exception of the general languor. One of the youths, who had been habitually troubled with palpitations of the heart, was quite relieved from them.

Third Series of Experiments.

Six students tried the effects of *cantharidine*. Each of them took a fourth of a grain, and repeated the dose, at intervals of two hours, for three times. Demulcent drinks were used freely at the same time. In all of them, there was a progressive retardation of the pulse; the *maximum* of this retardation was 22 beats in the minute. All of them suffered from general languor and powerlessness; from vertigo, and tremblings of the limbs; from loss of appetite; and from excessive perspirations. The sense of burning alone the urethra was present in all; but considerable in one only. In some there was a troublesome darrhœa. The general exhaustion continued, in a greater or less degree during the whole of the following day. The symptoms were found to be most effectually relieved by drinking freely of wine and of other spirituous beverages; which, although taken by some in large quantities, did not induce any tendency to intoxication.

Before quitting the details of these experiments, we should mention that the symptoms of poisoning were so alarming in one of the youths, that his case deserves to be noticed by itself.

Conton Bartolomeo, 23 years of age, had submitted himself to the three successive series of experiments. Shortly after having taken the last dose of the cantharidine, his pulse became slow, his limbs tottering; and vertigo and confusion of mind came on. The urine, which at first was very abundant, became suddenly altogether suppressed, and the patient complained of intense pain in the region of the kidneys.

The prostration increased; the limbs became quite powerless and cold; and the pulse was threddy and exceedingly slow, not exceeding 30 beats in the minute.

Dr. Giocomini finding that the wine, which he gave him pretty freely, was vomited, began to ply him with *rum*, in such quickly repeated doses, that in the course of little more than one hour, he took upwards of half a pint of it. The symptoms of poisoning gradually passed away, and the patient did not feel himself at all inconvenienced by the quantity of spirit, which had been given him.

From the series of experiments which we have now recorded, two very important conclusions may be derived with respect to the action of cantharides on the system.

1. That it is contra-stimulant, hypo-sthenic or depressing; its operation being exerted chiefly on the circulating system.*

2. That its most effectual antidotes are stimulating substances, such as alcoholic liquors, ammonia, laudanum, æther, &c. It is quite a mistake to suppose that camphor is an antidote to cantharides—both are contra-stimulants.

The therapeutic action of cantharides in diseases is quite accordant with these propositions. *Signors Borda* and *Rasori* have treated many cases of acute

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* Dr. Giocomini is inclined to believe that cantharides, even when used locally as a blister, has a contra-stimulant or antiphlogistic operation; and therefore that other vesicants, such as boiling water, strong ammonia, &c., cannot be so serviceable in the treatment of many complaints, as the blisters made with the Spanish fly.

pneumonia with large doses of cantharides alone; and they have derived the same results from them as from the use either of copious bloodletting, or of large doses of antimony or of digitalis. The *tolerance* of large doses of cantharides, in acute or *hypersthenic* diseases, is quite as remarkable as, it is well known, is the case with these last-named remedies under similar circumstances. What would inevitably produce symptoms of poisoning in a state of health, proves to be only a salutary medicine when the system is *hypersthenic*.

The degree or extent of *tolerance*, by the system, of cantharides or any other contra-stimulant furnishes a most useful guide to the practitioner in the treatment of acute or inflammatory diseases; as it has been found that the *tolerance* is almost always proportionate to the violence of the disorder, and becomes less and less, as it abates.

S. Larber de Bassano has employed cantharides in the treatment of all inflammatory diseases without exception; and he reports most favorably of the practice. The action of the heart and sanguiferous system is rapidly abated, and a *crisis* by urine or by perspiration soon follows. Its irritating effect on the bladder may be counteracted by the copious use of demulcent drinks.

The following case of *pleuritis* treated with cantharides by Dr. *Giocomini* will serve as an example of the practice. A robust, middle-aged man, was seized with the usual symptoms of pleurisy on the 15th of May, 1834. He had suffered several times before from similar attacks, which had been successfully treated with bleedings and other antiphlogistic remedies.

On the 17th he was admitted into the hospital, with sharp pain in the side, cough, hurried respiration, and burning fever. Four grains of cantharides, divided into twelve pills, were ordered to be taken in the course of the day.

18th. Copious perspiration during the night; pulse considerably reduced in frequency and strength; urine scanty, but voided without heat. The same dose ordered.

19th. Copious perspirations again; pulse 64 and soft; frequent desire to pass urine, and also some degree of tenesmus present; all the thoracic symptoms mitigated. The same dose repeated.

20th. Symptoms as yesterday. The urine has now become very abundant and the fever has almost entirely passed away. A scruple of camphor ordered to be added to the pills. In the course of a day or two the patient was quite convalescent.—*La Lancette Francaise.*

Professors Oppenheim and Fricke on the Use of Iodine Injections in Hydrocele.

The advantages of injecting an iodine-tincture solution into the *tunica vaginalis* of the testicle, after the evacuation of water, are stated, by the advocates of the practice to be manifold;—the cure is much quicker, being usually effected in from three to six, instead of twelve to fourteen days as after the port-wine injection; the pain is very much less continued, the patient being often able to move about in a few hours after the operation; and the risk is very much less in the event of any of the injected fluid making its escape into the cellular tissue of the scrotum, one of the most valuable properties of iodine being its ready *absorbability*. Indeed we are told that even although several drachms or an ounce of the iodine solution be left within the *tunica vaginalis*, it will gradually be absorbed without any bad consequences.

The very numerous cases, amounting to upwards of 200, in which Mr. Martin (vide *Transactions of the Medical and Physical Society of Calcutta*) has employed the iodine solution as an injection in cases of hydrocele, afford strong testimony in favour of the practice.

Professor Oppenheim mentions that he has been induced by these successful results to give a trial to the iodine, and that he has used it with great advantage in fifteen cases.

The first case occurred in a countryman, sixty years of age, who had long been troubled with a hydrocele, which had been tapped several times. After drawing off about six ounces of citron-coloured fluid, Professor Oppenheim injected a mixture of one drachm of tincture of iodine and three drachms of water, and left it in the sac. As the pain was very inconsiderable, he rubbed the scrotum with his hand, so as to bring the inclosed fluid in contact with every part.

Next day, the pain was still trifling; but rather greater on the third. A few days after this, the Professor met his patient in the street apparently quite well; and on examining the scrotum a week afterwards, he found that there was no trace of any recurrence of the effusion. *

The *second* case occured in a gentleman, 40 years of age. He had been punctured three times, at intervals of from six to ten months, before he applied to Professor Oppenheim. After withdrawing the fluid, a mixture of two drachms of the iodine-tincture and six of lukewarm water was injected, and left in until considerable pain was induced. The pain continued till evening, and then subsided.

For the following two or three days, there was considerable tumefaction and uneasiness in the scrotum; but these passed away, and on the sixth day after the operation, the patient found himself so little inconvenienced that he got up, and walked a considerable distance from his house. At the end of the third week, every trace of the disease had disappeared; and up to the date of the report, fourteen months later, there had been no return of it.

The *third* case is very instructive. The patient had submitted not only to puncture of the swelling ten times, but also to the injection of port-wine into the sac, by the late Professor Delpech of Montpelier. Still the disease returned. Oppenheim now used the iodine injection—two drachms to six drachms of tepid water. The pain lasted for three or four hours and then subsided; although the testicle was a good dead swollen the next day, the patient arose from bed; and on the fifth day, he went to business without inconvenience. The cure was permanent.

The *fifth* case deserves notice on several accounts. The patient was upwards of seventy years of age; he had been troubled with the complaint on both sides for nineteen years; the operation of puncturing the sacs had been repeatedly performed; he had submitted to the introduction of a seton through the left sac, and had been confined to bed for two months in consequence of the severe pain and suffering he had endured from it;* and he had resolved never to undergo any other operation, until he accidentally heard of one of the cures effected by Professor Oppenheim. The Professor seems to have entertained some reluctance to make any attempt to effect a permanent cure in the present case, in consequence of the age of the patient, &c. But the patient being now very desirous himself, his wish was acceded to. Three drachms of iodine-tincture with an ounce and a half of tepid water were injected. After remaining for about ten minutes in the sac, no pain along the cord was induced; the Professor withdrew the canula, and left the greater part of the injection within the sac. The patient walked home after the operation. No re-action followed either on this or on any

* The use of the seton had effected a cure of the disease on this side, after very protracted suffering.

subsequent day; and a re-accumulation soon began to make its appearance. M. Oppenheim did not deem it proper to repeat the operation.

It is not necessary to go into the details of the other cases communicated by Professor Oppenheim: in all of them a cure was effected without much trouble or suffering to the patient. In none was the local reaction so strong as to require depletion. Most of the patients could walk about and attend to their business in three or four days; some in a shorter time. Usually all trace of the complaint disappeared within three or four weeks; in some within a shorter time, and in a few not for two weeks more.

The results of the practice have been so favourable that M. Oppenheim now uniformly adopts it in all cases of simple and *uncomplicated* hydrocele. It is probably from having used it in unadvisable cases, that some surgeons have reported so unfavourably of the iodine injections.

The tincture used by M. Oppenheim is prepared with 48 grains of the iodine to one ounce of alcohol. As a precipitate is speedily formed when this tincture is mixed with water, the injection should not be prepared until the moment of the operation.

With respect to the length of time that the solution should remain in the sac, this must depend altogether on the accession and severity of the pain along the cord, that may be induced. The injection is to be used tepid, as the iodine remains longer in solution, than when cold water is used.

Such is the substance of Oppenheim's report, which is highly *favorable* to the use of the iodine injections. Let us now attend to the statements of M. Fricke, who has tried the practice and has found it, he tells us, altogether *objectionable*. We shall allude briefly to his cases first, and then make a remark or two on the discrepancy between the reports of these two eminent practitioners.

The *first* case occurred in a young man, twenty-five years of age. There was a double hydrocele; and the complaint had existed for eleven years. M. *Fricke* considered that there was no disease of the testicle, nor any other complication. On the 36th Dec., the right sac was punctured, and then filled with about six drachms of a warm solution of iodine, prepared with two drachms of tincture of iodine and six ounces of distilled water. Very little local reaction followed the operation; and, by the 2nd January, the scrotum had regained its former size, and a fresh accumulation of fluid had taken place.

Four days subsequently—viz. on the 6th of January, the iodine injection was repeated. The fluid did not flow out readily, but required to be pressed out by stroking the testicle. From this circumstance M. Fricke concluded, that partial adhesion of the opposite surfaces of the tunica vaginalis had already taken place. The consequences of this second operation were most distressing. Violent fever set in, and the scrotum became first inflamed, and then partially sphacelated. A large portion of the integuments and cellular substance sloughed off; and for some time the patient was in an alarming state. Ultimately however he did well, and the hydrocele on each side was effectually removed.

The *second* case occurred in a man twenty-seven years of age. The hydrocele had followed a contusion of the testicle, and was of about six months' standing. After the fluid was discharged, a weak iodine solution, of the same strength as what was used in the former case, was injected. It proved quite ineffectual; and as the fluid re-accumulated in the sac, the operation by incision was now resorted to, and proved successful.

The *third* case was that of a youth, 19 years of age. The iodine injection speedily effected a cure.

In the *fourth* case—which occurred in a man 28 years old, and was of about six or seven months' standing—a stronger solution of iodine, (viz. one part of

iodine tincture and three-parts of cold water), was used. Every thing went on well till the eighth day; and then the spermatic cord of the affected side began to swell. The swelling was followed by suppuration, which seriously retarded the recovery. Ultimately the case did quite well, and the hydrocele was got rid of.

The *fifth* case occurred in a man 42 years of age. The hydrocele was of only three weeks' standing, and did not exceed in size a hen's egg. The stronger solution of iodine—one part of the tincture and three of cold water—was used. Very trifling local reaction followed the operation. The effusion re-accumulated; and ultimately the radical operation by incision was performed.

Sixth Case.—A youth, 22 years old, had been affected with a double hydrocele for about four years. The stronger solution of the iodine was injected. The result was entirely successful on the right, and partially so on the left, side.

From the consideration of these cases M. Fricke is not disposed to report very favourably of the iodine injection.

He subsequently relates three cases in which he employed ice-cold water as an injection with complete success; but, on the whole, he seems to give a decided preference to the radical cure by incision, to the use of any sort of injection.—*Zeitschrift fur die Gesammte Medicin.*

Remarks.—It will be observed that the practice of Drs. Oppenheim and Fricke differs considerably in several points.

The impression is certainly left on our minds that the latter gentleman did not attend, in all respects, to the niceties of the operation—we mean, for example, the selection of the appropiate cases, the employment of an injection of due strength and of a proper temperature, &c. It is possible,—nay probable from the history of the case—that in the first patient the testicle was, if not positively diseased, at least highly irritable and disposed to take on a morbid action. May we not infer this from the circumstance of the hydrocele having come on at eleven years of age and having continued for 8 or 9 years? Remarks might be made on some of the other other cases too, reported by M. Fricke; but this we deem unnecessary, as we prefer leaving our readers to compare facts, submitted to their attention, for themselves, and drawing their own inference from them, rather than obtruding our own personal opinion.—*Rev.*

ON THE TREATMENT OF HYDROCELE WITH IODINE INJECTIONS IN THE EAST INDIES.

The following statements are from the pen of M. Dujat, who has, he informs us, recently returned from Calcutta.

Hydrocele is a disease of great frequency in the East Indies, among both the European residents, and the native inhabitants. Before the important discovery of Mr. Martin in 1832, of the efficacy of an iodine solution as an injection into the tunica vaginalis, the native inhabitants were unwilling to submit to any radical treatment, whether by the use of injections of port wine, &c. or by incision. The tediousness, as well as the severe pain, of the treatment deterred them from having anything done more than simple puncture of the swelling; and even this they often objected to, preferring to allow the hydrocele to increase to an enormous size.

It seems however that, since the year 1832, the number of patients treated in the native hospital alone at Calcutta has been very great annually. From January 1836 to Jan. 1838, 1,000 patients were admitted with hydrocele, and

all of them were treated with the iodine injection. The ages of these varied from 18 to 70 years of age. The disease seems to be most frequent between the ages of 25 and 35 years. In 305 cases the hydrocele was on the right, and in 325 it was on the left, side: in the remaining 370 cases the hydrocele was double, or on both sides. The quantity of serum evacuated varied from less than ten to upwards of 100 ounces.

Of the 630 cases of single hydrocele, in rather more than one third of the whole number the quantity of serum was under ten ounces; in *two-sevenths* it was from 10 to 20 ounces; in nearly a *third* it was from 20 to 50 ounces; and in eighteen cases it was from 50 to 120 ounces.

The practice recommended by Mr. Martin, and which M. Dujat saw employed in an immense number of cases, is as follows. After the serum has been discharged, the iodine solution* is injected; and, immediately afterwards, both the canula and the syringe are removed at once, as the solution is almost always left within the sac. The surgeon then works the scrotum about in his hand, so as to bring the solution in contact with every part of the tunica vaginalis. The after-treatment consists in merely applying compresses wet with Goulard lotion to the testicle, and in administering a purgative.

The patients usually walk home immediately after the operation, and return the next day or two to the consultation.

On the second day there is, in most cases, a slight febrile reaction, and the testicle is swollen and tender.

Many patients complain for several days of a coppery taste in their mouths, and that all food is quite insipid. Some patients return to their usual occupations on the following, but most on the third or fourth, day after the operation. In very few cases, the subsequent inflammation was rather *de trop;* but it was readily dissipated by the use of leeches, and of febrifuge medicines.

The number of failures in the 1,000 cases was extremely small; only *once* among the cases of single hydrocele, and only six times among those were the hydrocele was double or on both sides; and in all these last there was partial success, at least on one side. The cause of the failure was attributable either to the scrotum being affected with elephantiasis, or to the tunica vaginalis being indurated or otherwise morbid.

As some of the patients did not return after the operation, it may possibly have failed in a few of them: but this is conjectural. So satisfied are the Indian practitioners of the superiority of Mr. Martin's practice over any other, that it is now almost universally adopted.—*Gazette Medicale*, 1838.

Remarks.—Our readers will not fail to compare the eminently successful practice recommended by Mr. Martin, who first introduced the use of iodine injections in the treatment of hydrocele, with that of Drs. Oppenheim and Fricke, mentioned in the preceding article.

The success of Mr. Martin has indeed been very extraordinary; and it is right to observe that his practice has been tried by M. Velpeau, who reports most favourably of it. (Vide the Foreign Periscope of this Review for April, 1838.)—*Rev.*

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* Mr. Martin uses in almost all cases a solution of the same strength, viz. one part of the tincture (according to Magendie's formula) and three parts of water. The quantity however to be injected varies from a drachm and a half to five drachms of the mixture, according to the size of the hydrocele. The peculiarity of Mr. Martin's practice consists in using only a very small quantity of injection, and in leaving this within the sac to be absorbed by nature afterwards.

TREATMENT OF PROLAPSUS UTERI BY PARTIAL SUTURE OF THE VULVA.

Case 1.—A woman, 43 years of age, was admitted into the infirmary at Hamburg in March 1837. Fifteen months before she had been cured of a prolapsus uteri by means of the operation of *Episiorraphy*—or suture of the posterior commissure of the vulva. Subsequently she had become pregnant; and as, during labour, the band of junction between the two labia appeared to oppose the delivery of the child, the accoucheur divided it across.

The consequence of this was that the prolapsus returned; and it was for the relief of this complaint that she again sought the assistance of Dr. Fricke.

The operation of *Episiorraphy* was again performed, by excising a narrow longitudinal strip of the mucous membrane of the lacerated vagina on each side, and uniting the opposed raw surfaces together by means of two or three sutures. Although the anterior and posterior ends of the wounded surfaces did not adhere, the extent of junction was quite sufficient to prevent the exit of the prolapsed uterus; and the patient left the hospital, in about six weeks after the operation, relieved of her troublesome complaint.

Case 2.—A woman, 41 years of age, was admitted into the infirmary on the 6th of July 1837. She reported that, six years previously, she was delivered by means of the forceps of a child, and that ever since that time she had been afflicted with a prolapsus of the uterus. The protrusion was so large, and gave so much distress, that she had been long prevented from engaging in any employment. The exposed surface of the vagina and of the cervix uteri had become dry and leathery, and was here and there excoriated and ulcerated. A constant discharge exsuded from the prolapsed parts.

After soothing and astringent means had been used for some time, in order to allay the irritation and swelling, the operation of *Episiorraphy* was performed on the 22nd of August. The commissure of the labia extended back almost to the edge of the anus; but they, the labia, were still of sufficient breadth to permit a strip of skin to be detached from them.

As it had been repeatedly observed that, in order to prevent the protrusion of the uterus and vagina, it was not absolutely necessary that the whole extent of the cleft should be made to adhere, the posterior part, or that next to the anus, was left open at present, and only the anterior part was stitched together. When the united part had cicatrised, the tendency to prolapsus was found to be completely removed, and the patient could walk about without any fear of its return. An opening between the edge of the anus and the posterior edge of the artificial commissure continued; but, as this was attended with no inconvenience, Dr. Fricke saw no propriety in doing more. Indeed he has reason to believe, from the result of this and of some other cases, that it is much better for the surgeon not to attempt the junction of the whole extent of the cleft, and that he should rather follow the practice of leaving an ununited part posteriorly—through which the menstrual secretion, &c. may find a ready exit—as adopted in the preceding case.—*Zeitschrift fur die ges: Med.*

DEPUYTREN'S POMMADE AGAINST THE FALLING-OFF OF THE HAIR.

Take of Beef-marrow	8 oz.
Acetate of Lead	1 drachm.
Tincture of Cantharides	1 scruple.
Old Brandy	1 oz.
Oil of Cloves	15 drops.

The part that is bald, or is likely soon to be so, is to be rubbed with a portion of this pommade every evening.—*Journal de Pharmacie.*

Dubois' Rules for the Treatment of Uterine Hæmorrhage.

Before Labour. A.—If the hæmorrhage be *inconsiderable*, the following simple means may be sufficient—a horizontal posture; perfect quietude; cool air; cool acidulated drinks; evacuation of the bladder and rectum; and, if the patient be plethoric, the abstraction of a small quantity of blood from the arm.

If the hæmorrhage be *serious*, we should first have recourse to the means now mentioned, excepting perhaps that of bleeding. Should they fail, the application of cold lotions to the hypogastrium and the inside of the thighs is often serviceable; if this is insufficient, the ergot of rye* (36 grains in three doses, given at intervals of ten minutes) should be administered; and should the hæmorrhage still continue, we must then resort to the use of the plug.†

During Labour.—When the hæmorrhage is *inconsiderable*, and when, at the same time, the orifice of the uterus is not dilated, and the membranes are entire, the same means recommended at A—except the blood-letting which is very rarely necessary, should be used. If the orifice is dilated, and the membranes are still entire, it will be found useful in many cases to rupture these, should the hæmorrhage continue: if the membranes are however broken, the ergot of rye is frequently useful.

When the hæmorrhage is *serious*, and the mouth of the uterus is still undilated, we are first to have recourse to the various means recommended above, including the use of cold applications to the hypogastrium, and of the ergot of rye. Should however all these means fail, we should then rupture the membranes, if this can be easily done; but if not, we must trust to the plug,‡ or proceed to extract the child either by turning or by the forceps. It is always better to trust to the efforts of Nature to expel the child, than to have recourse to manual delivery; and in most cases of hæmorrhage, except when the placenta is implanted over the orifice and neck of the uterus, this will be effected under judicious management. Even in reference to the case, where the placenta is implanted at the uterine orifice, it sometimes happens that it does not cover it completely, and that the bag of the membranes will protrude at its side, and the labour will be completed without having recourse to turning the child.

When however it is necessary to perform this operation, the fingers should be passed up between the parietes of the womb and the adhering side of the placenta, so as to detach it from its connexion, and not, as many accoucheurs recom-

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* It is very doubtful that the hæmostatic property of this medicine depends upon its exciting the uterus to contract. It seems only to increase uterine contractions when they exist, but not to induce or bring them on, when absent.

† The operation of the plug is twofold: it first stops the hæmorrhage; and then, by its presence in the vagina, it excites the uterus to contractions, by which its orifice becomes dilated. When this takes place, we may either rupture the membranes, or allow labour to advance, according to the circumstances of the case.

‡ M. Dubois very properly points at the necessity of great attention, and of frequent examination both of the abdomen, and also, but more seldom, of the vagina, when a plug is used to arrest a serious uterine hæmorrhage. Many women have perished from internal hæmorrhage, when not a drop of blood flowed outwardly. The danger of such an occurrence is always greater when the labour-pains are weak than when they are forcible.

mend, through the substance of the latter. In a few rare instances, the placenta has actually been expelled by the natural efforts before the child, and the patient has recovered without having incurred any danger.—*La Lancette Francaise.*

POISONING BY ARSENIC SUCCESSFULLY TREATED WITH THE TRITOXIDE OF IRON.

A young lady, who had been long drooping from severe chagrin, attempted suicide by swallowing a quantity of arsenic. About an hour after the commission of the deed, she was seized with violent vomiting; and, as fortunately she had taken food not long before the poison was swallowed, it is probable that a considerable portion of the latter was rejected from the stomach. The excruciating pain and sense of burning in the abdomen, accompanied with cramps of the limbs, however increased: and the parents, becoming now more alarmed, called in the assistance of Dr. Deville.

From the nature of the symptoms, he at once suspected that his patient was suffering from the effects of a poison. The girl confessed the truth, and directed him to a drawer wherein the cup, from which she had drank the poison, was to be found.

After administering a quantity of milk, and having a large linseed poultice applied over the whole of the abdomen, Dr. *Deville* sent off to procure some of the *hydrated peroxide of iron*—a preparation which, within the last two years, has been strongly recommended as an antidote to the effects of arsenic. After several laboratories had been applied to in vain, a small jugful was fortunately obtained from Mr. *Caventon.* It was now upwards of five hours since the arsenic had been swallowed. A spoonful (nearly an ounce) of the peroxide was given every quarter of an hour, until nearly half a pound of it had been taken.

The alarming symptoms began to abate; and, as the pulse had risen and the pain of the abdomen was extremely severe, twenty-five leeches were applied to it, and the hot poultices were ordered to be persevered with.

It is unnecessary to pursue the particulars of the case further, as the patient ultimately recovered, after suffering for several days from most intense head-ache.

Dr. *Deville*, in his remarks upon the case, states that he is led to believe that very nearly a drachm of arsenic had been swallowed. True; a portion, perhaps a large one, of it had been rejected along with food by vomiting; but, as we know that even a few grains are sufficient to cause death, there is strong ground to infer that the peroxide of iron must have acted as a direct antidote, or neutralising substance.

Dr. *Bunsen* of Gottingen, who discovered this property of the peroxide, states that three or four drachms of it—recently prepared and suspended in water—to which sixteen drops of ammonia have been added, are sufficient to neutralize six or eight grains of arsenious acid: an insoluble and inert Arsenite of iron being formed.

M. *Lesneur*, while he admits the counter-acting operation of the tritoxide, says that a much larger quantity is necessary for the neutralization of the arsenic, than that stated by M. Bunsen.

But the subsequent researches of MM. *Busley*, *Soubeiran*, and *Miquel*,—all able and experienced chemists—have shewn that about twelve parts of the fresh tritoxide are sufficient to neutralize one part of the arsenious acid. The sooner that it can be administered after the injection of the poison, the more prompt and effectual will be the counteraction. M. *Bouley* says that if it be taken along with the poison, it annuls the effects of the latter altogether.—*Revue Medicale.*

Remarks on Paralysis of the Eyelids.

Although this affection is not unfrequently connected with, and is a mere outward sign and concomitant of, disease in some part of the nervous centre, it is nevertheless, very often quite a local weakness, and may be relieved by local applications.

The following four cases of *blepharoplegia* (in all, the upper eyelids were affected), are related by M. Carron du Villards, in a recent number of the *Bulletin General de Therapeutique*.

Case 1.—Madame Lenoir has long been subject to most troublesome attacks of *coryza*. The eyes are always more or less affected, and the lids are swollen and œdematous. After a recent attack, the right upper eyelid was found to be quite motionless; the patient had lost all power over it. The medical man in attendance had ineffectually tried various means; and the patient applied to M. *Carron*. He recommended frictions with concentrated acetic æther to be used three times a day.

By the third day the paralysis had quite disappeared.

In the *second* case, the *falling* of the upper eyelids followed an attack of erysipelas of the face, and had lasted for three weeks, when the patient applied to Mr. *Carron*. He recommended him to keep the eyelids continually wetted with a warm infusion of four drachms of the ergot of rye in boiling port wine (*quatre gres de seigle ergoté dans du vin rouge bouillant*). In two days the eyelids had recovered their mobility.

In the *third* case, the affection of the eyelids supervened upon a partial asphyxia, induced by the power of charcoal. Fomentations, with an acqueous infusion of ergot of rye, were ordered to be kept constantly applied to the affected eyelids: in eight days the paralysis had vanished.

The *fourth* case was not quite so simple. A lady, thirty-two years of age, had been long subject to intense headaches; and latterly a complete *blepharoptosis* of the right side had come on. She had been under treatment for some time before applying to Dr. *Carron*. He ordered her to be bled in the foot; to be cupped over the nape of the neck; and to take small doses of the tartrate of antimony. The use of strychnine, both internally and externally, was now resorted to; but, without advantage. A liniment, sharpened with some Croton oil, was then rubbed upon the affected eyelid and brow: this brought out a miliary eruption, and the patient began to recover speedily power over the movements of the lid.—*Bulletin General.*

Cases of Glanders in the Human Subject—Discussion at the Royal Academy on.

M. Husson read the report of a case which occurred very recently at the Hôtel Dieu.

An ostler had charge of eleven horses affected with glanders: in some the disease was acute, in others it was chronic. Several of these animals were killed by order of the public authorities. The man slept in the stable along with the glandered horses.

The first symptoms of sickness in him were headache, and a profuse discharge of mucus from the nostrils. This discharge became successively sanguineous and sero-purulent. To these symptoms were soon added a violent fever and

a severe pain in the right shoulder, which was considerably swollen and very tender on pressure.

Bleeding, general as well as local, was had recourse to: the blood drawn from the arm was strongly buffy. The swelling of the shoulder extended down along the whole arm. At one point was observed a gangrenous spot. Several pustules made their appearance on the body, neck, and arms; and a hard tumor was felt over the right lower ribs. The pustules became covered with eschars; delirium and coma supervened; the pulse was filiform and sometimes almost imperceptible; and death soon followed. The disease had lasted for eight days.

Dissection. There was observed to be a generally diffused eruption of pustules and of gangrenous spots. The pustules were large on the face especially, and on the neck and scalp. At various parts of the body there were large subcutaneous tumors, of a livid aspect on their surface. The largest of these was situated over the right shoulder, and was more than an inch in diameter. These tumors were found, on being cut into, to contain a sanguineous purulent matter. The one on the shoulder was found to communicate with another large one over the right rib by a chain of little knotty swellings. The contents of the thoracic one had made their escape into the cavity of the pleura. In many parts of the limbs, numerous abscesses were found between the muscles and the skin. Many of the lymphatic glands in the neck and elsewhere were much enlarged, and also softened.

The mucous lining of the nostrils exhibited patches of erosion and ulceration, as well as numerous pustules scattered over its surface. The *septum narium* was perforated at one point for the extent of half an inch or so, and it was covered with pustules and minute ulcerations.

The pleuræ were red; and the lungs presented the traces of suppurative lobular pneumonia.

An abscess existed in the right pleural cavity, and communicated with the swelling on the outside of the thorax.

The arteries, veins, brain, and other viscera appeared to be normal.

The pathological phenomena, which we have now enumerated as having been found in this patient, are the usual *post-mortem* appearances discovered in horses which have laboured under acute glanders.

Case 2nd, occurred recently in the practice of *M. Breschet.*

A robust healthy man, 34 years of age, had been employed to attend to some glandered horses, and had slept for some months in the stables where they were kept. The earliest symptom of disease in him was an attack of intense pain in the left knee; this was accompanied with swelling and redness of the part, and exhibited much of the appearance of phlegmonous erysipelas.

When taken to the Hôtel Dieu, the knee was tumefied, and covered with numerous phlyctenæ. A discharge—at first mucous, then bloody, and at last sero-purulent, and very similar to the nasal flux in glandered horses—from the nostrils came on; and, nearly about the same time, an eruption of pustules and of phlyctenæ within the nostrils, and on the fauces, neck, trunk, and arms made its appearance. The pustules were not unlike those seen in *Frambœsia:* their bases were hard, and surrounded with livid areolæ, and their apices were covered with eschars. Some of these pustules resembled small carbuncles: the cellular substance surrounding them was traversed with tracts of purulent matter. The phlyctenæ were filled with an opaque sanious matter. On examining the nasal passages, they were observed to be coated with a yellowish-coloured matter, which was readily made, by slight compression, to exsude down upon the lip. The external characters of this case may therefore be classed under four heads: 1. Pustules (like those seen in *varicella* and in *frambræsia*) and phlyctenæ; 2. Erysipelatous swelling of the affected joint; 3. Gangrenous or carbuncular spots on the surface; and 4. Suppurations, more or less extensive, in the subdermic cellular substance.

After the eruption had made its appearance, the patient became somnolent and oppressed with stupor; there was a general *abattement* of all the corporeal energies; the urine was discharged involuntarily; the breathing was laborious and noisy from the snuffling in the nostrils; the patient was troubled with a cough: he became delirious, and died.

Dissection. The livid areolæ round the pustules had disappeared, and the pustules themselves were *affaissées;* their contents were a yellowish pus: the subjacent skin was excoriated. The subdermic cellular tissue was infiltrated at various points, and principally beneath the eschars, with purulent matter; and this was found also between the neighbouring tendons, and even in the substance of the muscles. The veins did not seem to be inflamed; but their contents were, in several places, found coagulated and mixed with pus. There was a sanguineous infiltration in the cellular tissue of the right arm.

The lymphatic vessels were injected, swollen, and inflamed; the glands were enlarged in the neighbourhood of the pustules. The joints were sound, with the exception of the elbow-joint, which contained a large quantity of sanguineous synovia. The mucous membrane of the nasal passages was swollen, and coated with a thick layer of *glanderous* matter. When this was carefully washed away, the membrane was found to be highly vascular and injected; here and there it exhibited small elevations formed by the concreted matter, at other points little *crypts*, such as we see on the mucous membrane of the intestines after fatal typhus fever; and mixed with these were pustules and ulcerated erosions. The submucous tissue was infiltrated with pus. The lining membrane of the maxillary and other sinuses, and that of the fauces, palate, pharynx, and even of the larynx, exhibited somewhat similar appearances. There was an abscess in the cellular tissue of the pharynx. The mucous membrane of the bronchi was highly injected, and its follicles were much enlarged. The lungs presented traces of *lobular pneumonia.* The other viscera seemed to be normal.

After the reports of these two cases had been read to the Academy, M. *Barthelemy* rose to express his dissent from the opinion of M. *Breschet*, that his case was one of genuine glanders, communicated to the patient from the horses which he had been tending. He stated that he had gone himself to the stables, where the man had been employed, and that he examined the animals very carefully; and that it was quite true that there were some glandered horses in them; but that the disease in all of them was of the chronic and not of the acute form (la morve chronique et non la morve aiguë). Now the chronic disease was, every one admitted, essentially different from the acute form, and was certainly not contagious.* It would seem however, from M. *Barthelemy's* own admission, that there had been, a fortnight before the patient's employment at the stables, a horse labouring under the acute or genuine glanders.

He urged several other objections to the idea that the disease in M. *Breschet's* case was real glanders.

M. *Rochoux* seems to have taken the same view as M. *Barthelemy*, as he expressed his disbelief in the communicability of the *morve* from the horse to the human species.

M. *Bouley* was surprised that, in the present day, any one could question the occurrence of genuine glanders in the human subject. Whether, indeed, the disease is ever of spontaneous origin, or whether in all cases it is the result of contagion from the horse, is a question which is perhaps not yet definitively settled. The latter view is the more probable; as every instance of the *glanders* hitherto observed in the human subject, has occurred in ostlers and other persons who have had to do with horses.

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* We believe that the *chronic morve* is the *Farcy* of English veterinarians, and the *acute morve* is the genuine *Glanders*. It is unfortunate to apply the same term to two diseases, if they are different.

M. *Bouley* then canvassed the question, whether the disease is strictly contagious among horses themselves. He alluded to the results of various experiments, which had been made on this subject by a committee appointed not long ago by government, to ascertain this very point. It would seem that these experiments were considered to authorize the conclusion, that the chronic *morve* is not contagious; and even that the acute form is not always, but only occasionally, so. In very many cases it was found, when healthy horses were brought into contact or at least contiguity with glandered horses, there was no communication of the disease. M. *Bouley* seems to lean to the idea, that the disease, such as appeared in M. *Breschet's* case, and which, of late years, has been by many decided to be glanders communicated from diseased horses, may possibly be of spontaneous origin in the human constitution.

M. *Rayer* replied to the preceding speakers. He adduced various arguments to prove that the glanders in the human subject* is a disease *sui generis*, and distinct from any other in the nosological catalogue; and that it is strictly analogous in its essential phenomena—the leading symptoms during life, and the pathological appearances discoverable on dissection—to the same disease in horses. In both, there is a morbid state of the nasal passages; in both there is an eruption of pustules and gangrenous spots on the skin; in both there is frequently a lobular pneumonia; and in both, there is the rheumatic affection, and also the appearance of purulent tumors in different parts of the body.

The lungs, the nasal passages, and the skin, are the organs which are most generally and most seriously diseased in glanders. The immediate cause of death may usually be traced to the purulent alterations of the lungs. The proposal, therefore, to perform tracheotomy in such cases is founded on an erroneous presumption.

M. *Rayer* dwelt very forcibly on the acknowledged fact that all the recorded cases of glanders in the human subject have occurred in persons who have had to deal with horses. He then proceeded to discuss the assertion, made by M. *Bouley* and others, that the chronic form of the disease is not contagious. His experience and researches are directly opposed to the truth of this opinion. The one form is frequently observed to be convertible into the other: if this be the case, are we not bound to admit that they are strictly of the same nature?

The conclusions, which M. *Bouly* had drawn from the experiments recently made by the French Committee, are, in M. *Rayer's* opinion, quite erroneous. In the last place, the learned speaker alluded to several experiments, narrated on most trust-worthy authority, which shew that, on the one hand, the inoculation of the matter—(it is not stated whether it be the nasal discharge, or the contents of the pustules on the skin)—from the human subject is capable of producing genuine glanders in the horse; and, on the other hand, the too frequent occurrence of veterinary surgeons, and others, accidentally catching the disease from glandered horses, sufficiently proves the converse of the position.

MM. *Velpeau* and *Blandin* followed M. *Rayer*, supporting the same view of the question, and expressing their decided belief that the disease in two cases reported above was genuine glanders, and was caught by infection from diseased horses.—*Memoires de l'Academie de Medicine.*

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* Dr. Elliotson, we believe, has proposed to designate the disease *Equinia*, to tally with *Vaccinia*. It seems to be a very good appellation.

A CONSULTATION OF MM. RAYER, ORFILA, and CAFFE, ON A CASE OF MILKY URINE: CHEMICAL EXAMINATION OF THE URINE AND BLOOD: PRACTICAL REMARKS.

M. *Costa*, 23 years of age, a native of Brazil, stated that, four years ago, he first observed that his urine had occasionally a milky appearance: his general health at the time was very good, and he experienced no uneasiness in any part of the urinary apparatus. A year afterwards he began to suffer attacks of severe pain in the region of the kidneys and in that of the bladder: the pain was frequently excessive before and during the evacuation of his water, causing him to bend himself forwards and draw up his limbs to his stomach. The urine at this time was extremely thick, so that it flowed out with difficulty, and had often a quantity of blood mixed with it.

These attacks usually lasted for about twelve or fourteen days, and were treated with copious leeching of the hypogastrium and perineum, warm baths, and the use of nitred drinks. The cessation of the urinary distress was slow and gradual, and was not complete for upwards of three months; the state of the urine varied every now and then; being at one time milky, at another time natural, and at a third more or less bloody.

From this period, the urine often remained quite clear and normal for two or three months at a time, and then re-assumed a milky appearance without any appreciable cause. The exercise of riding seemed generally to favour the re-establishment of a healthy state of the secretion.

While at *Rio Janeiro* he had taken a quantity of terebinthinate preparations, and was kept on a light unstimulating course of diet.

In July 1836, he came to Paris with the view of consulting some of the leading physicians there for his malady; which, although it had not visibly affected his health, was nearly stationary and made him very uneasy as to the consequences. His urine had been quite natural during the whole of the voyage to France.

On reaching Paris, he consulted M. *Caffe*, who recommended *at first* a decoction of willow-twigs to be alternated with the waters of Vichy, Barege-baths, warm clothing to the surface, and avoidance of exposure to cold; and *subsequently* a decoction of horse-radish, and pills of sulphate of iron and sub-carbonate of potash. These means seemed to have no effect on the complaint.

Towards the end of September, M. Costa visited Belgium and England, continuing the use of the chalybeates during the whole of the time. The travelling certainly benefited him; but the urine again assumed a milky aspect shortly before he returned to Paris.

MM. *Orfila* and *Rayer* now joined M. *Caffe* in consultation upon this curious case; and the following memoranda of the symptoms were marked down.

The urine was very seldom more abundant than the quantity of liquid drank, The milky colour varied exceedingly at different times, both in intensity and durability: at one time the urine was nearly as white as milk; then it was only somewhat troubled, and at length it assumed a perfectly healthy and limpid aspect. These changes rapidly succeeded each other without any appreciable cause. Even when milky, the urine had always its characteristic smell and taste. Since the use of the chalybeate medicines, it had been much less frequently bloody than it was before; and no pain in voiding it had been experienced of late. The general health of the patient seemed to be perfectly good; his appetite was regular and vigorous, and his sleep was always sound. The urine was generally clear for some time after sexual intercourse.

M. *Guibourt*, professor of pharmaceutical chemistry at the *Ecole de Medicine*, was requested to analyse the urine at different times; and the following is the substance of his report to the three physicians in attendance.

"The urine of M. *Costa* is sometimes white like milk; at other times it is of a blood-red colour; and at other times again it is quite clear and of a healthy appearance.

When it is red, if left to repose, a dark red deposit is found to subside to the bottom of the vessel,* the supernatant liquid being then always more or less decidedly white and turbid.

The milky urine contains sometimes so much fatty matter, that the surface becomes, after a short repose, covered with a thick layer, like cream. If sulphuric æther be added to the milky urine, it quickly becomes nearly quite clear, and the æther acquires a yellow colour. By evaporating this æther, a quantity of fatty matter may be readily obtained.

The milky urine, which has been made transparent by the addition of sulphuric æther, forms an abundant coagulum of albumen, on being boiled. Nitric acid also coagulates it; but acetic acid does not. This proves that there is no *caseine* in the urine; and hence that, strictly speaking, it should not be called *milky*.

The milky urine, after it was freed from all the fatty matter by means of æther, and also from its albumen by boiling, was found, on the addition of nitric acid, to deposit beautiful crystals of nitrate of urea. We therefore conclude that the urine of M. Costa differs from healthy natural urine, only in containing a quantity of fatty matter and of albumen, to which may also be added the occasional admixture of the colouring matter of the blood, superadded to the usual ingredients of the secretion."

The results of M. *Guibourt's* analyses, if compared with those by *Dr. Prout* of what he calls *chylous* urine, shew very clearly that the present case is to be considered as one of this kind. That the term *chylous* is more appropriate than that of *milky*, appears from the circumstances that no *caseine* can be detected in the secretion, and that, if we add a small portion of genuine chyle to healthy urine, we obtain a fluid which will be found to contain albumen, fatty matter, and sometimes also a certain proportion of the colouring matter of the blood along with the usual ingredients of urine.

The attention of MM. *Rayer*, *Orfila* and *Caffe* was now directed to ascertain the state of the blood in their patient.

Four ounces were drawn from the arm, and *M. Guibourt* was again requested to lend his assistance.

The blood, after some hours' repose, was found to be a gelatinous trembling mass, without any appearance of white buff (*couenne blanche*) on the surface. After twenty-four hours, when shaken about in a glass vessel, it became completely fluid—a circumstance which seemed to indicate an utter absence of fibrine. This liquid blood was mixed with two parts of alcohol, for the purpose of coagulating it: the coagulum was then pressed and dried. It weighed seven and a half drachms, or nearly one-fourth of the weight of the blood. It was pulverulent, and of a pale reddish-white colour; whereas the coagulum of healthy blood, after being treated in the same manner, is a hard vitreous-looking substance of a very deep red-brown colour.

It appears therefore that the blood of M. *Costa* contains much less colouring matter than healthy blood does. It is to be remarked however, that this difference might be partly owing to the large quantity of albumen present in the former; for certainly the quantity of dried coagulum—seven and a half drachms from four ounces of blood—exceeds that usually met with in the analysis of healthy blood; and as this coagulum was found to contain very little *fibrine*, we must suppose that the solid matter was chiefly *albumen*.

By subsequent experiments made with æther on the dried coagulum of M. *Costa's* blood, and on the same quantity of dried coagulum of healthy blood, it was found that about four grains of a fatty, solid, opaque substance was ob-

* This deposit, although it much resembled a coagulum of blood, is not strictly so. It consists of the colouring matter only, without any of the fibrine. This is readily proved by adding some æther, which completely dissolves it and leaves no trace of the deposit.

tained from the former, and only two grains of a coloured residue, partly fatty and part saline, from the latter.

From all these researches we may fairly conclude that the blood of M. *Costa* differed from healthy blood in containing less fibrine, and a greater quantity of albuminous and fatty matter; and therefore that it more nearly approached to the composition of chyle than the latter.

The practical application of these conclusions is, that the alteration of the urinary secretion may be considered as dependent upon an abnormal state of the circulating fluid—a state which seems to depend upon an imperfect transformation or assimilation of the chyle with the blood. The case of M. *Costa* was therefore considered by M. *Rayer* and his colleagues as one of primary vitiated sanguification or *hematosis*. The treatment which these gentlemen recommended was as follows:—

1. The patient to take fasting every morning, during several months, six steel pills.*
2. To take an ounce of cinchona wine every day, an hour before dinner.
3. To use a cool bath, to which two ounces of sulphate of potash have been added, for half an hour at a time, thrice a week.
4. Every evening before going to bed, to take twenty-four grains of subcarbonate of iron in a wafer or in stewed fruit, (dans du pain à chanter ou dans de la compote.)
5. The food to consist, in a great part, of beef or mutton, either roasted or grilled.
6. The ordinary beverage to be of some generous wine *coupe* with a chalybeate water.
7. Sea-bathing during the fine weather.
8. The occasional attacks of strangury being attributable altogether to a mechanical obstruction of the urinary passages from coagula, recourse must be had to diluents, and, if necessary, to the use of the catheter to relieve this symptom.

Before concluding these remarks on this rare affection, we may briefly state

1. That in the cases of chylous urine mentioned by Dr. Prout, the patients, although some of them had been subject to the irregularity for several years, did not exhibit any marked disturbance of the general health.
2. That the cases of *hæmaturia*, which are of frequent occurrence in certain tropical climates as in the Isle of France, and are not unfrequently followed by a milky or chylous state of the urine, are not usually regarded as attended with much danger

From the report of a discussion, which recently took place in the Academy of *Rio Janeiro*, the metropolis of *Brazil*, it appears that this abnormal state of the urinary secretion is not of unfrequent occurrence there,† especially among females; and that the gravity or danger of the affection is by no means commensurate with its tediousness and resistance to therapeutic measures.

3. Cases of milky or chylous urine are rare in Europe. In those, of which we have any report, the general health of the patients does not seem to have been much disordered. In some, however, the affection seems to have been followed by *diabetes*.

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* The formula for these was—

Take of Subcarbonate of iron.... ʒj.
P. cinchonæ rubræ .... ℈.
P. canellæ ..... gr. xij.
M. ft. misce in pil. xxiv. div.

† It seems that the late Ex-Emperor of Brazil, *Don Pedro*, had consulted M. *Rayer*, in consequence of a milky state of his urine. It is not stated whether the health of the royal invalid suffered from the disorder.

The preceding details are extracted from a report which is signed with the names of MM. *Caffe*, *Orfila*, and *Rayer.*—*Le Presse Medicale.*

UTILITY OF IRON (ESPECIALLY THE IODURET) IN SOME SYPHILITIC AFFECTIONS.

M. *Ricord* of the Hopital des Veneriens at Paris has, for some time past, used pretty extensively the *proto-ioduret of iron* in cases of secondary syphilis, when the system of the patient is feeble, and especially if at the same time it is scrofulous. He reports very favourably of its beneficial effect under such circumstances.

In numerous instances where the ordinary methods of treatment had been ineffectually tried, the constitution seemed to rally quickly under the use of this preparation of steel, and the local disease at the same time began to assume a healthy action. Repeatedly have we seen, says M. *Ricord*, old extensive ulcers of the throat, which had long resisted all the usual topical applications and internal medicines, rapidly change their aspect under the influence of the *proto-ioduret*, and, within a very short time, heal and cicatrize. In many patients affected with caries of the bones of the face, cranium, and extremities, the process of separation of the diseased from the healthy parts has been surprisingly quickened, and the general health has at the same time been materially improved by its use.

Another set of symptoms, which has been much benefited by the use of the proto-iôduret, deserves to be especially noticed—we allude to old tedious discharges from the vagina and urethra, occurring in persons of enfeebled lymphatic constitutions. The dose, which M. *Ricord* recommends, is six grains during twenty-four hours at first; this is to be gradually increased to half a drachm or two scruples. Besides the internal administration of the ioduret, its external use, as an injection, has been extensively adopted by M. *Ricord* in cases of obstinate gleet. The strength of the solution is usually half a drachm to eight ounces of water: in a few cases the quantity of the ioduret has been raised to two drachms.

As illustrative of the beneficial influence of steel upon certain forms of venereal ulceration, we may here appropriately mention that M. *Cullerier* has frequently used the carbonate of iron with happy results in cases of unhealthy ulcerated buboes.

The following case furnishes an appropriate example.

A middled-aged man was admitted into the Hopital du Mida with numerous chancres on the penis, and a very large bubo in the right groin. A blister was applied over this swelling, and next day the denuded surface was covered with lint wetted in a strong solution of sulphate of copper (ʒj. to ʒj. of water:) an eschar was formed, and when this separated, a quantity of pus was discharged. The swelling however remained almost as large as ever; and friction with mercurial ointment was therefore resorted to. The gums becoming painful, the ointment of the hydriodate of potash was substituted. Subsequently the kali causticum was applied, to cause another opening in the tumor. The ulcerated bubo began to assume a most unpromising aspect; its edges being averted, and its base black and oozing blood. Leeches were applied several times on its inner surface, but without producing any benefit. (*Is not this rather a strange practice.*) —*Rev.*

The patient, after three months' suffering, was greatly reduced in flesh and strength; the ulcers were fungoid and livid; the gums were spongy and bled on the slightest pressure; and the general health seemed to indicate a scorbutic cachexia. M. *Cullerier* now recommended the internal use of the carbonate of iron, and, by continuing it for a month, the man was discharged quite well.—*La Lancette Francaise.*

MISCELLANIES.

A New Weekly Contemporary.

Start not gentle editors of the antipodes of Medical Journalism—ye of the Gazette and Lancet. We do not propose to turn hebdomadal, nor do we announce a rival. Your interests are safe at present. Still you will be spared the verification of the adage, that, "though two are company, three are none." Dr. Ryan is not resuscitated, nor has Henderson of the Old Bailey, obtained a respite for some tenant of the condemned cell on condition that he should work for life in irons. Some modest gentleman has not yet discovered that all your matter is mere moonshine, and your correspondents so many huffers—that practical knowledge is most found where there is least practice—that acquaintance with physic is not to be sought among the regular "saw-bones," but in those fortunate physicians, who, having been bred to something else, turn doctors when the other trade has failed—that an enormous capital is requisite for criticism, and proves it by displaying a stock of impertinence that would suffice for all the daily papers—in short, that a new journal is absolutely requisite, and that he is *the* man who has just the proper quantum and no less, of judgment and wit, of learning and fun, of strict impartiality and undeviating infallibility. No Katerfelto of this description has yet sent the bellman round, and our weekly contemporaries of London may still continue to exist.

The new Journal is a Paddy. He comes direct from Dublin, and "His legs that would make a chairman stare," display an Irish breadth and length, refreshing to see after the shankless Cockneys.

The "Dublin Medical Press," is our hero's name, given, we have no doubt, on the Hibernian principle, by which Bill was called Robinson—"for shortness." Suppose, readers, we tell Patrick to bow and address your honours. He is well up in the blarney:—

"It is impossible, by mere assertions, to prove the sincerity of professions, or to remove the suspicion that men act from interested motives only—but let the readers put themselves in the place of the editors, and then seen whether their position is so enviable, or the prospect before them so flattering as might at first sight be supposed. Great labour, pecuniary risk, and personal obloquy are sure to be encountered; the return for which, it must be admitted, is not necessarily the most gratifying. In seeking the support of the profession, therefore, they are almost induced rather to claim it as a right than to supplicate it as a favour. Every man who can think must admit that something of this kind is required, and that the want of it has been a positive injury to every individual. In the country, gentlemen have been kept in total ignorance of what is going on in the metropolis, or are misled by imperfect information or misrepresentation. In Dublin, they are equally ignorant of the real state of the profession in the provinces. Year after year information of the utmost value has been lost, from the want of an efficient vehicle for its effectual diffusion, to which all, without repugnance or hesitation, could have recourse. Emulation has ceased, and a deplorable apathy has been engendered by the absence of competition and the want of the stimulus of example. The rights of individuals and the interests of the profession at large have been compromised or sacrificed from the want of a medium through which their complaints could be conveyed, or their wants made known, in an authenticated form, to the legislature or the public. The managers

of many public institutions, uninfluenced by public opinion, refuse to keep pace with the advance of improvement. The business of instruction and the regulation of education is interrupted, because those interested in the continuance of irregularities have found that they could proceed without danger of detection or reproval."

It is evident how much the Dublin Medical Press is wanted. That being the case, its success is certain, or political economy is a flam. The demand regulates the supply, and the Dublin Medical Press shews us that the demand is pressing. The only draw-back on the glowing representation, is the remarkable circumstance, that, owing we suppose to the perversity of human nature, no sooner does a public-spirited editor furnish a Journal, which, on his own unexceptionable shewing, exactly takes the measure of the breechless public, than another editor starts another Journal, with the same lamentation on the same want, and the same declaration that he can remedy it. Nay it is a curious fact that the more Journals there are the more necessity would there seem to be for fresh. Were there none there would be merely a vacuity to fill. But those existing are so bad, that the rubbish must first be cleared away, before the process of hole-stopping can even be entered on. We have remarked, and it is a striking fact, that the more popular a Journal is, and the larger sale it has, the more indignant is the remonstrance of the new comer, and the more glaring does he represent the want of a periodical to be—a striking instance of the blindness of the public and discrimination of editors.

We may presume then that a new weekly Journal is much desired in Dublin. Let us hear what our young friend, the Medical Press, has to say for his intentions. Is he high Tory, Conservative, Wig, Whig-radical, Tory-radical, or out and outer? What has he to say on our *Corn*-laws—what on the *Charter?* We find that there has been deep solicitude on the subject in Ireland.

"In order to relieve the anxiety of our friends, and the apprehensions of our enemies, it is necessary to say a few words as to the tone and temper we hope to be able to adopt and preserve in the course of our labours. Satisfied that a free press, especially when directed to educated and cultivated minds, is the most powerful means in existence to elicit truth, encourage honesty, bridle folly, and resist oppression, we propose to avail ourselves of its powers to the fullest extent to which it is legitimately applicable. So far from concurring in the opinion entertained by many, that the free public discussion of medical affairs is to be dreaded, we are firmly convinced that it is the only means by which justice can be obtained, confidence restored, and those dissensions, heartburnings, and collisions, which distract and divide the profession, removed. Nevertheless, entertaining these views, we are equally convinced that confining this power within its proper limits is a work of the utmost difficulty; and that while we shall hereafter study to attain this object, we shall, we fear, necessarily occasionally fail of success.

From all observation bordering on interference with the private or professional affairs of our brethren, it is, we hope, unnecessary to say we feel bound scrupulously to refrain; but, on the other hand, we must remind our readers that when a man challenges remark, by voluntarily presenting himself or his opinions to public attention, he must take the consequences in good humour. Certain spoiled children of fortune, habituated to the deference of a small circle of dependents, and flattered by themselves and their admirers into a very unreasonable estimate of their sagacity and disinterestedness, view with impatience and anger all expression of doubt as to their sincerity, or hesitation as to their capacity or judgment. When such men come forward to influence public measures, attempting to persuade others as they have persuaded themselves, that they are impelled by the loftiest sentiments of regard for the public good, they are mortified and irritated if any suspicion be entertained that the ruling passion weakens their judgment or warps their opinions. This expression of doubt in

their sincerity they call imputing motives. Such doubts and suspicions we must, as journalists, entertain; and if the expression of them be called imputation of motives, we must stand convicted of that offence. In undertaking the duty we have imposed on ourselves we assume that we are the retained advocates of the rights of the profession, and the interests of the medical institutions in particular, and that we are bound to resist and expose every attempt, direct or indirect, to encroach on the one or sacrifice the other."

There are one or two points on which we feel doubt. A free press and free discussion, says our Editor, will remove dissensions. If they do, we will go to school to our contemporary, and take lessons in editing. Neither a free press nor a shackled one has ever lulled party-spirit yet, nay, the general hypothesis is, that the freedom of the press is conducive to faction. It has its advantages, but making people unanimous is not one of them.

Another subject of misgiving is, our friend being retained both for the profession and the institutions. How he means to serve God and Mammon is not clear. But, on this side of the Channel, the Irish colleges are a complete piece of botheration to us. We know nothing about them, and the wheels within wheels are neither seen nor understood. The Irish pures, for instance, are wroth at not being allowed to sell medicines. But we come to more tangible matters. It seems, after all, that our quarterly contemporary has said and done, that even his "sad and learned" writers have not found out the secret of reviewing. Yet that is odd. The public must recollect our contemporary's prospectus. Sir Benjamin Brodie was to do all the articles upon the joints, at the rate of a guinea a line—Sir Astley Cooper was hired for the thymus gland—Dr. Baron was retained expressly for cow-pox—and Goss and Co. were engaged for the seminal weakness department. The editors had stationed themselves in different quarters of the country, merely to watch the progress of science, (how could they do that if they were fixtures in town?) and make meteorological observations. Yet in spite of all this, authors were not satisfied—all kinds of reclamations were made—partiality, prejudice, and ignorance were openly charged on editors who had proclaimed the reign of abstract purity and of universal knowledge—and, in short, reviewing is as bad as ever. The Dublin Press, however, will set matters right.

"With respect to the manner of conducting our reviewing department it is necessary to say, that we hope to be able to avoid the two extremes which constitute the great reproach of the periodical criticism of the day. While we shall study to avoid the fulsome language of overstrained panegyric, which disgusts by its exaggeration, we shall also study to avoid all wanton outrage of the feelings of writers by a display of our critical attainments at their expense. Statements or reasonings calculated to lead to erroneous conclusions must, of course, be denied or refuted; but we hold that in doing so it is unnecessary to indulge in harsh expressions or arrogantly assume a superiority to which, after all, we may not be entitled. With style or language we have nothing to do. If bad, we cannot mend it; if good, the reader will discover its beauties without our assistance. An author often loses sight of his subject while he endeavours to polish a sentence or round a period; while he who writes at once what he knows and thinks, succeeds, because he is intent only on securing a belief in his statements. Those anxious for the diffusion of knowledge should not discourage the exertions of a labourer in the field, because his efforts are feeble or his method awkward. The pecuniary loss sustained by publishing of a bad book, and the loss of character incurred by the author, are sufficient punishment, while the work itself 'mixes with the stream and strengthens the general current.' There is, however, a class with which we shall not hesitate to deal freely: those who write, not because they have anything of value to communicate, or because they are anxious to contribute to the improvement of the rising generation, but because they want notoriety, and seek to keep their names be-

fore the public eye. They are to us like the hawkers of damaged wares through the streets, we are sickened and stunned by their vociferations. Those also who by accident or management have been placed in the position of public instructors, and who, reckless of all consequences, use the privilege conferred on them without judgment or discretion, must be arrested in their career. The practice of dictating without adequate authority, drawing hasty conclusions from insufficient data, and attaching undue value to mere novelties, has done incalculable mischief to the student. There is another class, also, with which we must occasionally come into collision; but our persuasions shall be more in sorrow than in anger. These are the sentimental admirers of the modest pretensions of the Parisian school, who pertinaciously propagate the delusion that from this source only is knowledge to be derived. We hope to compel them to prove or abandon their position. Our reviews, from our limited space, must be brief, more analytical notices than elaborate essays, informing our readers that certain works have been published, and acquainting them with their contents and probable value."

The "Press" is determined to have some fun. Why should curing folks be melancholy work? Why should reviewers be doggedly dull. Here again the Dublin hits our contemporary. The solemn dullness of his leaden page is too heavy for the mercurial temperament of Ireland.

"In what humour shall we address our readers? Our sad and learned brethren will counsel seriousness and reprove all levity subversive of the acknowledged gravity of the medical functionary. We ourselves incline the other way. We see no reason why we should not sweeten labour by a little play, where the opportunity offers. We have enough of scenes to encounter calculated to engender melancholy—let us not create new causes of it. We must occasionally indulge mirth, even at the risk of shocking our sedate friends; and while we borrow a leaf from an Hippocrates or a Galen, sometimes enliven it by a sally from a Rabelais or an Arbuthnot. Such weapons cannot be considered unlawful, although to be used with caution and good feeling. If provoked to mirth by weakness, vanity, or overweening presumption, it shall not be displayed by a sardonic grin, or ironical sneer, but a correcting smile, or that privileged expression of amusement which extravagance justifies."

Our Irish contemporary is right. There is a time for all things, and assuredly there is not a more certain sign of the absence of genius, than a disrelish for humour and wit. But a truce to what Baxter calls the "heavy-assed Christians."

Our Dublin friend will pardon our badinage. We shake hands all the more cordially, because we do so with a laugh. We wish our weekly contemporary success, and, until he can run alone, which we hope and believe will be very shortly, we shall feel the greatest pleasure in giving him a lift. All we insist on is—a sincere desire to advance science, and the absence of those personal attacks which are happily passing away from the pages of medical journals. Publications, actions, humbug, affectation are fair game.

PROFESSIONAL AND GENTLEMANLY BEARING OF THE AMERICAN MEDICAL PRESS.

The Medical Examiner, a journal at present published every fortnight, and soon to be published every week, in Philadelphia, makes the following observations on the tone of the medical press of America.

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* "A shove to Heavy-assed Christians."

"The tone and spirit of the American medical press is, in general, unexceptionable. The freest expression of opinion is shown to be compatible with decorum and courtesy of language. It is felt that personalities are unworthy the dignity of our professional literature, and if, here and there, an outbreak of ill-temper and scurrility emanates from some turbulent spirit, the contempt awarded him proves the general correctness of taste and feeling.

Sectional feeling is, we are glad to say, seldom evinced by the professional periodicals of our country. The appeal to local prejudices, in a literary discussion, is paltry. It degrades the scientific to the level of the partisan political journal, and, though it may succeed in affecting particular private ends, it is visited with the disapprobation of every candid and enlightened mind. Happily, our remarks have no application to the majority of our contemporaries. If they have some point, in a solitary instance, for the honour of the profession, we regret it. We trust that the party in question will profit by the rebuke of a journal of its own vicinity; and, for the future, abstain from 'introducing this species of unjust and unmanly, or, to say the least, *unscientific* writing into a medical journal.'"

So far as our acquaintance with our Transatlantic contemporaries goes, the portrait is perfectly correct. They are distinguished by the absence of that truculent spirit which has infested and disgraced the medical press of this country. The editors of these republican journals evince a degree of courtesy which some affect to belong exclusively to aristocratic society. Of the Medical Examiner itself, we can speak in high terms. We are confident, from the manner in which it is conducted, that success will wait upon its labours.

TEMPERANCE SOCIETIES.

These societies were first formed in North America, at Boston, in 1813. The abuse of spirituous liquors was first forbidden, but the use of them was permitted. The interdiction was eluded, and for twelve or thirteen years little was accomplished. In 1826 many influential inhabitants of Boston united to form one, in which the use of spirituous liquors should be totally interdicted. In 1828 there were 222 such societies, numbering 30,000 persons. In 1829 a diminution of the mortality was observed in persons under 40 years of age. In 1831 the use of spirits was put a stop to in the American army. The following year 500 vessels left the American ports without spirits on board, and the rates of insurance were lowered on this account. On board vessels of war, sailors relinquishing the allowance of grog received an equivalent. The troops received an equivalent in sugar, coffee, and rice. In 1834 the temperance union of the United States was formed at Philadelphia, to serve as a general centre for the other societies. Vessels adopting the temperance plan made more rapid and prosperous voyages than others—and in 1835, of 186 whaling vessels, 168 took no spirituous liquors; and the insurance was lowered five per cent. in consequence. This year two millions renounced the use of spirituous liquors, four thousand distilleries were discontinued, eight thousand persons discontinued the trade in spirits, more than twelve hundred captains sailed without spirits on board their vessels, and twelve thousand habitual drunkards were cured. The first temperance society in Europe was established in 1829, at New Ross, in Ireland; and others were established shortly after, as well in Ireland as in Scotland. In 1830 they were established in Sweden, Finland, and some parts of Russia. In 1831 the London temperance society was established, with the Bishop of London at its head; and many have been established in the colonies.—*Annales d'Hygiene Publique, Oct.* 1838. *Dublin Medical Press, No.* 1.

These are flattering results of the water *minus* rum system. Vessels on the

temperance plan made more "rapid and prosperous" voyages than the groggy ones. Nature herself would appear to have joined the temperance society; cool and comfortable, she only puffed a steady breeze upon the swelling canvass of the tea-totallers, while the perverse lovers of grog were always in a calm or a hurricane.

Then twelve thousand *habitual drunkards* were cured. Not a soul less than this glorious number was redeemed. It was not eleven thousand nine hundred and ninety-nine—No, it was exactly twelve thousand. Think of that Master Brook. We never saw a habitual drunkard *cured*. Yet here are twelve thousand recoveries. Will any one laugh at tea-totalism after that?

The truth is, that this is a species of fanaticism, got up to meet the drunkard's fanaticism. It may do good, for many are ever in extremes, and can abstain when they cannot moderate. But the idea that tea-totalism will ever prevail extensively is quite chimerical. It may stop a gap, and keep a few of the million sober, until the diffusion of education and of knowledge, instructs the mass in their real interests.

SIR PHILIP CRAMPTON'S HISTORY OF MEDICINE.*

Our excellent, and witty friend has been reading an amusing and clever sketch of the History of Medicine before the Royal College of Surgeons of Ireland. It is very spirited, and by no means uninstructive. We shall extract a few passages from it. Sir Philip divides medicine historically thus:—

"1stly. You have what may be called *natural or instinctive medicine*, in which every man was his own physician, and where there were no persons set apart as practitioners of the art; this is a state in which medicine exists to this hour in many regions of the earth, and even in this country there are many populous districts that are without any other medical aid, than that which the uneducated inhabitants supply to one another. In those remote districts, however, the clergy often perform the offices of the healing art, but in a very different spirit from that in which it was exercised by the priests who officiated in the temples of Esculapius.

2ndly. You had the 'medicina sacra,' or medicine as practised by the priests of whatever religion.

3rdly. You had 'philosophic medicine,' or medicine as it was practised in Greece, previously to the æra of Hippocrates, to whom Celsus ascribes the merit of having 'separated medicine from philosophy,' a merit to which I shall have occasion to shew he was not entitled.

Lastly, you have 'empirical medicine,' or medicine, very much as it is practised amongst us at this day, in which close attention is paid to the *signs* of disease, rather than to their *proximate causes*, and in which medicines are exhibited, with reference to their known *effects* rather than to their *occult qualities*. This custom of discarding hypotheses, as to the *causes* of disease, and the *modus operandi* of remedies, is not of very modern date, although it has been revived within almost our own times, and is confined almost to the British nation; it is exactly the doctrine of the empirical sect of which Serapion was the head, and which sprung up shortly after the death of Hippocrates."

2. *Division of Labour among the Egyptians.*—Those of our readers who have read Herodotus will probably recollect his stating that, in Egypt—every distinct distemper had its own physician, who confined himself to the study of that and of no other, so that all places were crowded with physicians; one class had the care of the eyes, and another of the head, another of the teeth, another of the stomach, and another of occult diseases. The Egyptians forestalled the

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* Dub. Journ. Jan. 1839.

moderns. Your mad doctor, heart doctor, water doctor, and pox doctor are descendants of the ancient brood. In a high state of civilization these subdivisions of labour must take place.

3. *Pretensions to anatomical Knowledge in the Time of Cicero.*—This extraordinary man appears to have considered the study of anatomy unnecessary. "The public," he says, "have a notion, that a knowledge of the internal structure of a man is useful to a physician, and hence it is, that the physicians *pretend* to possess it." But what little the physicians of those days did know of anatomy was obtained from animals and from *authority*. We dare say that many of our readers remember the saying of a comparatively modern anatomist, on finding that the human body did not correspond with plates of, we believe, Vesalius,—"the parts must have altered since his time."

4. *Some Cases of Cure by the gods as well authenticated as any effected by Animal Magnetism.*—Sir Philip gives us this brief description of the mode of treatment adopted by the principal physicians of Greece, prior to the era of Hippocrates—the priests of Esculapius.

All who had the means of repairing to those temples were accomodated within its precints: having in the first place laid their offerings on the altar, and been purified by the lustral water, they were put to rest in the middle of the temple, and as soon as they were supposed to be asleep, a priest clad in the vestments of Esculapius, and surrounded by a troop of damsels, who were devoted to the service of the temple, and were well instructed actresses, entered the sacred dormitory, for the purpose of indicating to the patient the remedy which the oracle of the deity had revealed as most suitable to his case. As the god could only reveal himself in a dream, the patients were placed on beds of ram's skins, which were supposed to cause divine visions, and it was considered an impiety for the patient to open his eyes, and not to feign a profound sleep, even though wide awake; and above all, to doubt that whatever he *did* hear with his ears, or see with his eyes, was other than a celestial vision.

The servant, into whose mouth Aristophanes puts this recital, describes, in a comical manner, the address and promptitude displayed by the chief priest in putting into his sack, while these ceremonies were being performed, all the votive offerings which had been laid upon the altar.

It seems to signify little what caste of men constitute the doctors. They all appear to have a strong disposition to *sack* the spoil. From Esculapius down to Dupotet, animal magnetism has had this at least substantial in its tendencies. The revelations at the North London Hospital are after all but a scurvy imitation of the Esculapian chorus, and had the latter been got up with proper accompaniments, we doubt whether it would not have *taken* better. Yet the Okeys, (we stand corrected the O'Keys) were clever pantomimists.

But the practice of the priestly mummers was far from unsuccessful. It was the custom of the patient, when cured, to hang up a votive tablet describing his case and the lucky treatment. Nothing could be more unexceptionable in the way of testimony. There it was, every one could see it, if false it could be contradicted, and not being contradicted of course it was true. An ancient tablet of this kind is preserved by the family of Maphæa. Sir P. Crampton copies from it one or two of the shortest cases—specimens of all.

1st case. The god pronounced the following oracle to Caius, who was blind, that he should approach the sacred altar, and having bent his knees, he should pass from the right to the left; after this, he should place his five fingers on the altar, then raising his hand he should apply it to his eyes, which, no sooner had he done, than he saw perfectly well; all the people present testified their joy that so great a miracle should have been performed in honour of our emperor Antoninus.

2nd. The god gave this oracle to a blind soldier, named Valerious Aper, that he should take the blood of a white cock, and mixing it with honey, use it as a collyrium; this he did for three days, and his sight was restored; he came to return thanks publicly to the god, and place this tablet in his temple.

A third is cured of a spitting of blood by eating apples, taken from the altar and stewed in honey.

We should like to know whether animal magnetism can produce any thing more satisfactory. Nothing but Esculapius or animal magnetism could effect such cures.

5. *The Claims of Hippocrates to admiration.*—"He had no suspicion that the brain was the organ of sensation and motion; he considered it, on the contrary, to be a gland or sort of great sponge, for the purpose of absorbing the pituita, and the superfluous humours of the body, and discharging them through the nose. The heart he considered as the origin of the arteries and nerves (mistaking the cordæ tendinæ for nerves); and the liver as the origin of the veins. The lungs he considered as the absorbers and condensers of the humidity of the body. But this is, I trust, a sufficient sample of the state of anatomy and physiology in the time of Hippocrates; with respect to his practice it may be enough to say, that it was founded on hypothetical notions respecting the four humours (as he calls them) of the body—blood, pituita, yellow bile, and black bile A state of health he considered to consist in the happy proportion in which these humors were combined; and disease, in the derangement of these proportions; then, much depended on the influence of the stars, and on the power of numbers. Seven days were allowed for the acute stage of fever, and seven for the chronic; during the first seven, little or no nourishment was to be given, but during the last, the coction of the humours being completed, the patient was to be amply supplied with food."

6. *There have always been plenty of St. John Longs and Ingestries.*—Every body knows how Lord Ingestrie deposed very solemnly that he saw St. John Long extract something very like mercury out of a man's head. It will be observed from the following statement of Rhases' that this kind of humbug is almost as ancient as animal magnetism itself.

"There are so many little arts used by mountebanks and pretenders to physic, that an entire treatise, had I a mind to write one, would not contain them. Some give out that they can draw snakes or lizards out of their patients' noses, which they seem to perform by putting up a pointed iron probe with which they wound the nostril till the blood comes, then they draw out the little artificial animal composed of the coagulated blood, or of liver, &c. Some pretend *that they can collect all the floating humours of the body to one place by rubbing it with* wild cherries, *which causes a burning or inflammation*, and they expect to be rewarded as if they had cured the distemper."

7. *The tragical End of the great Anatomist, Vesalius.*—This extraordinary man completed his astonishing work upon anatomy, in the year 1543, when he was yet only 27 years of age. When we consider, remarks our author, that when Vesalius commenced his labours, there was nothing extant on the subject of anatomy, but the wretched treatises of Galen, and the small work of Mundinus, giving the result of the dissections of three bodies, with what astonishment must we view a work so complete, that of the anatomy of the human body, and that little absolutely unimportant, has been left unobserved. Unhappily Vesalius was in advance of his century. His story has been partly told in touching though in simple language by Ambrose Paré.

"Il ne faut point se hâter d'ensevelir et encore moins d'ouvrir le corps des femmes hysteriques de pour d'encourir une calomnie ainsi que de ce siècle est arrivé à un grand anatomiste; je dis grand et célèbre duquel les livres réparent

aujord'hui les études des hommes doctes, lequel étant pour lors residant en Espagne fut mandé pour une femme de maison qu'on estimoit être morte par une suffocation de matrice. Le deuxième coup de rasoir du'il lui donna commenca ladite-femme à se mouvoir et à démontrir par autres signes quelle vivoit encore dont tous les assistans furent grandement étonés. Je laisse a penser au Lecteur, comme ce bon seigneur faisant cette œvres fut un perplexété comme on cria *Tolle* apris lui, tellement que tout ce qu'il put faire fut de s'absenter du pays, car ceux qui le devoient excuser c'étoient ceux qui lui couroient sus, et étant exilé, tôt après mounet de déplaisir, qui n'a été sans une grande perte pour la republique."

The affair however, as Sir Philip tells us, had a different issue from that related by Paré. It appears, that pursued by the relations of the woman according to some, or of a nobleman (according to others,) whose trance he mistook for death, (although it is highly probable, that the story was got up for his destruction,) he was condemned to death by the tribunal of the the Inquisition, but at the interposition of Philip II., whose physician he was, and by whom he was beloved, sentence of death was commuted to a pilgrimage to the Holy Land. Returning from Jerusalem, his vessel was wrecked on the Island of Zante, near the Morea, where he died of cold and hunger, on the 15th October, 1564.

8. *The Stone crushed in the Bladder* 270 *Years ago.*—The paper containing this fact is lodged in her Majesty's State Paper Office in Ireland, book iii. p. 259, February 1567. The patient was Sir Henry Sidney, Lord Deputy Lieutenant.

"*The State of Sir H. Sidney's Bodie, MS., Ireland*, 1559, *in her Majesty's Office of Papers and Records of State.*—My Lord President, being of the age of xxxvi. years, went into Ireland a hole man, not touched with the stone, and so remained one year and a half or thereabought, and then, after long grief, avoided two stones which were very big, such as few men have been known to have avoided. After this he took his journey into the north parts of Irelande, and so continued void of pain or grief until his arrival in Englande, which was about 8 weeks after, and then at Chester felt the like grief as at first, and so continued in pain until Christmas Eve; at that time being searched with surgeons he avoided one other stone, *broken by the surgeon his instruments in divers pieces*, for that it was so great that otherwise it could not be taken out, for all the pieces laid together might make the quantity of a nugmegge."—*Collin's Lives and Actions of the Sidneys*, p. 95."

One cannot attach much value to so lame an account as this. Sir Philip says that the operation was performed in Dublin, but the text seems to shew that it was done in England.

Sir Philip's sketch is a very light and pleasant one, and the passages we have picked out will be read with amusement.

Pellucid Solution of Magnesia.

This very useful and elegant preparation we have been trying for some months, as an aperient antacid, in dyspeptic complaints attended by acidity and constipation, and with very great benefit. It has the advantage over common magnesia of being completely dissolved, and therefore not liable to accumulate in the bowels. It is decidedly superior to soda or potass, on account of its aperient quality, and of its having no tendency to reduction of flesh and strength, which the two carbonates above-mentioned certainly tend to, when long continued and taken in considerable quantities. We hope Sir James Murray, the discoverer of the process for preparing this medicine, will take trouble to make it more generally accessible by the public in this metropolis, there being only one or two authorized agents here.

GERMAN PHYSICIANS.

A person who signs himself J. M. and who *does* the German Schools in the Journals—one, in short, of the penny-a-liners, gives this account of German Physicians.

"It might be a curious inquiry to ascertain what are the causes of the present state of medical literature in Germany; why there is such a want of good works on medicine and surgery, along with such an abundance of excellent books on anatomy, physiology, and materia medica. Three causes suggest themselves. 1st, The theoretical and generally unpractical turn of the German mind; 2d, the want of public hospitals managed as in England; and 3d, what appears to be far the most important cause, the mode of appointment of professors in the German Universities. The aspirant to a professorship commences his career by obtaining leave to lecture under the name of '*privatim dosens.*" His object is to obtain some name as soon as possible, in order to secure early promotion to a professorship. This he can most readily do by writing something; and, whether the individual has had experience in his profession or not, he writes his book. In anatomy and physiology, where every one has the means of making new observations, this is very well, but in medicine and surgery it has the most prejudicial effects. The same evil continues after the *privatim dosens* has attained the rank of professor, when it is a matter of profit to him to have his system of medicine as a hand-book for his class. The general result of this is, that for practical improvements in medicine Germany has always to look to England and France, although it is not meant to be denied that from time to time works of great practical value appear."

ANIMAL MAGNETISM.

Where is this celebrated *science?* What has become of NICKEL"? Echo answers—"NIHIL"! In the whole history of human delusion there is hardly a parallel to the rapid rise, and still more rapid fall of animal magnetism in this country! It is as dead as Perkinism or the ravings of Johannah Southcote!! It is now a wandering, disembodied spirit—viewless as the air, and silent as the grave—thus illustrating the celebrated hypothesis of one of the high priests, respecting the flights of the soul from the body? Or is it hovering about the North London Hospital and Wigmore-street, sighing over its fallen greatness, and bewailing the palmy days when it basked in the sun-shine of the LANCET? Is it still capable of pouring the balm of consolation into the wounds which its martyrs suffered, and under which they still suffer? Be this as it may, the brief career and tragic tale of animal magnetism may exercise a beneficial influence on our profession, which, alas! has proved itself—at least a portion of it—to be credulous as the ignorant African or the benighted Hindoo! Half a century hence, when the periodicals of this time are pored over by some book-worm of that day, the investigator will rub his eyes and wipe his spectacles, on turning to the pages of the Lancet and Gazette for 1838. He will scarcely believe that men, whose names, too, may go down the stream of time with credit and honour, in other respects, should have been so infatuated as to give a moment's credence to such outrageous ravings as those of animal magnetism. Should this journal survive the ravages of time, the book-worm will find in its pages a confirmation of the fact that the MAGNETO-MANIA pervaded some portion of even the magnates of the profession in the British Metropolis! But he will learn with satisfaction, that an overwhelming majority of the profession set their faces against the imposture and scouted the credulity of their deluded brethren. The lesson has been placed on record, that such de-

lusions cannot be participated in, or even countenanced with impunity. It is quite unnecessary to advert to the disastrous consequences which have followed in the train of this momentary mania! They will serve as a beacon to prevent the shipwreck of others.

HORSE-HAIR GLOVES.

Another therapeutic agent has been lately added to the list, in the shape of "HORSE-HAIR GLOVES" for currying the human surface, when the skin is torpid—and we might add, for affording a luxurious treat to those who are afflicted with pruriginous and certain *other* cutaneous defædations attended with itching and irritation. These gloves were invented, we believe, by a gallant military officer, and possess considerable advantages over the common flesh-brush, both as to the facility of application, and the degree of counter-irritation. The cases are very numerous in which cuticular frictions are of the greatest importance, and we predict that this invention will prove very useful. In many instances it is a great desideratum to give employment to indolent patients in any kind of exercise—and that of friction is perhaps one of the best *we* can suggest, or which *they* will adopt. We observe that they may be procured at Mr. Dinneford's, Old Bond-street.

CASE OF EXTENSIVE ANEURISM OF THE THORACIC AORTA.

By SIR DAVID J. H. DICKSON, M.D. F.R.S.E. and L.S. Physician of the Royal Naval Hospital, Plymouth. March 5, 1839.

In the last, or 21st volume of the Transactions of the Royal Medical and Chirurgical Society, I published a case of enormous abdominal aneurism; and I now send you another extraordinary instance of extensive aneurism of the thoracic aorta. In this case and in that of Eli Hickson (aneurism of the arteria innominata) of which an abstract appeared in the 26th vol. of the Medico-Chirurgical Review, the sufferings of the patients presented a striking contrast, when compared with the state of *Keane*, above alluded to, who not only suffered so much less, but actually improved in health and flesh, during the progress of an aneurism of immense magnitude*, and they strongly illustrate the difference between a tumor confined within the walls of the chest, pressing upon vital organs, and a ventral aneurism, though of much greater size, where the yielding of the abdominal parieties and viscera, afforded such comparative facility of distention.

Henry Ferne, seamen, aged 35, was sent to this hospital, on the 19th of November, 1837, supposed to be in the last stage of phthisis; although attended with symptoms not usually observed in that complaint. He was stated to have repeatedly suffered from severe attacks of bronchitis—the pulse was weak and irregular, but seldom above 100—the respiration noisy and difficult—and there was some dysphagia—and a total disinclination for food (attributable, perhaps, to pressure on the eighth pair, and splanchnic nerves) and excessive emaciation,

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* I am not aware whether there is any instance of larger, or of so large an aneurism on record as that in question. You and many of your readers are more conversant with such cases than myself: but I may observe that it appears to have much exceeded in size, that mentioned in Sir Astley Cooper's lectures, as the largest which had come under his observation; and which extended from the emulgent arteries into the cavity of the pelvis; and also (amongst others,) a case of "enormous aneurism of the abdominal aorta," reported in the Lancet, alluded to by Mr. Samuel Cooper in his excellent Dictionary of Practical Surgery.

But the symptoms which most attracted attention were, the loud bronchial rales especially the sibilous, and sonorous; pains, and a sense of stricture around and through the chest, and precordial region; severe fits of coughing, with little or no expectoration; weak, stridulous voice, and great dyspepsia, which, however, became more urgent in the afternoon. The state of the respiration might be readily accounted for, by the narrowing of the air-tubes from previous inflammation, or from the pressure of enlarged glands, or other tumor upon the windpipe, or on the nerves supplying the glottis; but I am not aware that we can depend with certainty upon any physical sign, as indicating the nature of the obstruction; as I have witnessed excessive dyspnœa, where no adequate cause of obstruction of either the circulation or respiration could be discovered *post mortem*. But it is very probable that the aneurism would have been detected, in the present instance, if there had appeared any inducement to employ auscultation on the chest and back of a patient who was in the last stage of existence.

Sectio Cadaveris, 22 hours P.M., presented a healthy aspect of the anterior surface of the lungs, pericardium, &c. but on raising the bronchus to ascertain the cause of the dyspnœa and stridulous voice, a large tumour was discovered behind its bifurcation; which further dissection proved to be an aneurism of the thoracic aorta, occupying the posterior mediastinum, and extending from the second to the ninth dorsal vertebræ—some of which had been rendered carious by its pressure. The dilatation commenced at the posterior part of the aorta, just below the ductus arteriosus, and, as in the case previously alluded to, by a kind of neck, which, expanding to the breadth of eight inches, descended behind the artery, œsophagus, par vagum, and other contents of the mediastinal region, as far as the diaphragm. The coverings of the aneurism, which were farther strengthened by the reflection of the pleura anteriorly, consisted of the external and middle coats; but the internal terminated by an ill-defined line near the neck of the pouch. The walls, especially of the superior and lateral portion of the cyst, were so thin as to be ruptured by the removal of the left lung; when a large quantity of grumous blood escaped, and concentric layers of nearly colourless fibrine were separated, exposing the interior surface of the sac; which was rough, but so soft as scarcely to be distinguished from the coagulated blood. Posteriorly, where the tumour was attached to the spine, its coats had entirely disappeared by absorption, and the vertebræ (which like the heads of some of the ribs, were partially absorbed) formed the posterior boundary: but the invertebral substance had, as usual, resisted this destructive process. The circulation was preserved through a channel in the anterior part of the tumor. The lining of the artery, for some distance below the disease, was gathered into longitudinal folds, and the normal elasticity of its tissues was diminished, although no earthy nor steatomatous deposition was detected. The heart was not diseased. The lungs were congested with frothy serum, and their texture was more friable than natural; they were not tuberculated, but the bronchial mucous membrane was evidently thickened and inflamed. The stomach and other abdominal viscera appeared to be comparatively healthy, and no further arterial disease could be detected in that cavity.

DAVID J. H. DICKSON.

P.S.—Since writing the above, I have returned from witnessing the *denouement* of a most extraordinary and puzzling case—which dissection proved to be a rupture of the duodenum; the coats of which were so extremely attenuated, that they had given way in four different places near its termination in the jejunum. The man, who had been disrated for fighting, had been seized with violent pain (which he attributed to flatulency) in the right hypochondriac region, on going to the head, at four o'clock in the morning, and which continued excruciating, notwithstanding copious depletion, and every means tried to relieve him—before and after his admission into the hospital, at 3 P.M.—and he died before midnight.

GLEANINGS DURING THREE YEARS SPENT IN THE INDIAN SEAS. By W. B. MARSHALL R.N.

Medical Establishments of New South Wales and Van Dieman's Land.
The territory of New South Wales, at the period of my visits there in 1833-4, contained 34-505 square miles, or 22,083,200 acres of ground; and was divided into nineteen counties.

New South Wales.—According to a census taken on the 2nd September, 1833, there were, scattered over a space of 34,505 square miles, 60,794 inhabitants; of whom 44,643 were males, and only 16,151 females; 5,256 of the former, and 4,931 of the latter being under twelve years of; while 22,798 male persons were free, and 21,845 bond; and 13,453 free females, with only 2,698 bond—leaving little more than one marriageable woman to three men.

The proportion of the town and rural populations, was calculated to be as one to three, or nearly so.

The Colonial Medical Department consisted of 1st. *An Inspector General of Hospitals.* 2nd. *Four Surgeons*, who were located at Sydney, Parramatta, Liverpool and Newcastle. And nine District Assistant-Surgeons, one of whom was resident at each of the following stations—Sydney, Paramatta, Liverpool, Newcastle, Windsor, Port Macquarie, Bathurst, Moreton Bay, and Norfolk Island. At each of these stations there is a Colonial Hospital; those at Sydney, Parramatta, and Liverpool, which I inspected, were more than respectable institutions, while their management was admirable and their efficiency universally acknowledged. Of that at Norfolk Island I have already published an account in the Medico-Chirurgical Review, for January 1838.

There are also hospitals attached to the two excellent Asylums for Male and Female Ophans, the former near Liverpool, the latter a little way out of Parramatta. These are attended by the district surgeons of those places, who receive extra payment for the extra duty.

There is also an hospital in the female factory of Parramatta, with a ward for midwifery cases. And an asylum for lunatics, of which also a notice will be found in the last October number of this Review.

Nosological returns from all the districts are sent in to Sidney, monthly and quarterly.

The dietary of the patients is according to a prescribed scale, varied, however, at the pleasure of the medical officer.

The allowances of the Medical officers are, what the allowances of our parochial medical officers ought to be, the same as officers of corresponding ranks in the army. The apparently increased expense of this just remuneration for professional labour, is, in reality, only an enlarged economy—the health of the population being maintained by it—and the restoration to health and usefulness of a single individual being righly considered a benefit conferred upon the community, where the population is small and the territory large—not, as in this country, looked upon as of very doubtful advantage either to the party concerned or to the public, in consequence of the received dogmas of modern political economy.

The following is an exstract from a "Government Order," bearing date "Colonial Secretary's Office, Sydney, June 29, 1831;" and headed: "*Assigned Servants.*" "The great expense to which the Government is subjected by the maintenance and treatment of the assigned servants of settlers, when sent into Colonial Hospitals, having been brought under its notice, and the attention of the Government having also been called to the expense to which his Majesty's Treasury has been subjected in keeping up an extensive constabulary, a great portion of whose time has been employed in conducting the servants of settlers from Sydney to their masters in the interior; and taking others back, who, from

misconduct, or, from other circumstances are returned to the Government, the following regulations have been laid down in these cases respectively, viz :.—

1. That the master shall pay at the rate of one shilling a day for the time his servant shall be in the hospital, to the extent of 30 days. Should the servant continue under treatment for any longer period, the master will not be required to make any further payment.

2. That the persons who send their servants into any of the hospitals, shall appoint an agent on the spot to take them away, as soon as they are recovered, and unless they be so taken away, they shall be considered as immediately assignable to other parties, in order to prevent the hospital from being improperly burthened with men who do not require treatment."

Van Dieman's Land extends from 42° to 45° south latitude, and from 145° to 148° east longitude. Its length is 210 miles, and its breadth 150, but the undulating surface of the whole island must materially increase the extent of both, taken superficially. The entire area contains 23,437 square miles. It was supposed, at the close of the year 1833, to embrace a population of 32,000 inhabitants.

For the convict portion of this population, there are, *one Surgeon*, who resides at Hobart Town, and has charge of the crowded colonial hospital in that place; *six Assistant Surgeons;* and *eleven District Assistant Surgeons*; thus making a medical corps equal in number to that of the larger and older colony of New South Wales, the population not being more than half the number of that in the latter. This numerous body being one of the many benefits flowing to the island from the philosophical and benevolent government of Colonel, now Sir George Arthur, to whose paternal anxiety for the welfare of every portion of the community, I am happy to bear testimony, from the personal knowledge I had of that truly good and great man, during my short sojourn in the island.

The 11th of his "Regulations," for prisoners of the crown, provides for the medical attendance of assigned servants in private service, on a plan, which, I should think, ensured efficient aid to every such individual throughout the colony, and ample remuneration to the medical attendant, at a cost altogether disproportioned, apparently, to the service and professional skill contracted for.

According to it, no free person can be received into any of the colonial hospitals, without an obligation being entered into by a respectable householder, making himself liable for the sum of 2s. per diem while the patient remains in the hospital, and for the expenses of his funeral in case of death. The masters of assigned servants become liable for the sum of 1s. daily for one month.

The District Assistant Surgeons in the interior receive for attendance on each convict servant, five shillings per annum, payable whether sick or in health: and exclusive of medicines. Free persons in the towns, can only receive medicines gratuitously on the certificate of a clergyman or magistrate, of their inability to pay for them. And for convicts their masters must pay, as in the country, 5s. annually.

The expense to government of the entire Colonial Medical Department, including two large hospitals, was by the above wise, humane, and just regulations, for a whole year, only £798.

I shall only remark upon those regulations, that, by them, a very necessary distinction is established between the medical skill and attendance rendered, and the medicines required to give effect to that skill and attention.

The contract of 5s. per annum on behalf of each assigned servant, sick or well, was for medical advice and assistance, Colonel Arthur rightly considering that still, they were obtained "at a very cheap rate." Medicines were to be paid for extra—except in the neighbourhood of the principle hospitals, in cases where the sick attended for relief as out-patients.

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2. On Granular Degeneration of the Kidneys, and its connexion with Dropsy, Inflammation, and other Diseases. By ROBERT CHRISTISON, M. D. President of the Royal College of Physicians. &c. Ed. Octavo, pp. 288. Edinb. Adam & Charles Black. Dec. 1838.

*** *In our next.*

3. Medical Portrait Gallery, Part 11. Price 3s. By Mr. PETTIGREW. Contains Conclusion of Memoirs of Dr. Clutterbuck —Portrait and Memoir of Huxham—Portrait and Memoir of Mr. Wardrop.

*** *This is a very good number.*

4 Medical and Physical Researches; or, Original Memoirs in Medicine, Surgery, Physiology, Geology, &c. &c. Illustrated with numerous Plates. By R. HARLAN, M.D. F.L.S. London, Surgeon to the Philadelphia Almshouse. Octavo, pp. 653. Plates. Philadelphia,1835

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17. The Naturalist's Library. Vol. VIII. Mammalia. Conducted by Sir W. JARDINE. Bart. Lizars, Edinb. 1830.

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21. Observations on the Employment of solid Nitrate of Silver in Stricture, &c. By T. B. CURLING, Esq.

22. Observations on Hypertrophy and other Affections of the Os Uteri. By EVORY KENNEDY, M.D. Master of the Dublin Lying-in Hospital.

☞ *In our next.*

23. History of British Reptiles. By THOS. BELL, F.R.S. Part II. Price 2s. 6d. J. Van Voorst.

24. A general Outline of the Animal Kingdom. By THOMAS RYMER JONES, F.Z.S. Illustrated by numerous Engravings on Wood. Part IV. Price 2s. 6s. Van Voorst.

25. Portrait of Dr. J. Elliotson, delineated and lithographed by Miss Newell.

*** *A very striking likeness.*

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*** *We have only time, at this late period of the quarter, to quote the following sentence from Dr. Severn's preface, and in which we cordially agree.*

"The fame of Dr. Blundell is firmly established—his successful efforts to enlarge the sphere of knowledge must ensure to these Lectures universal circulation, wherever genius is appreciated, science regarded, and humanity valuable."

30. A series of Anatomical Plates, &c. By JONES QUAIN, M.D. Fasciculi 58 and 59. Division 3. Nerves 20. Price 2s. each: Taylor and Walton. March, 1839.

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*** *This work came too late for notice in this number of the Journal.*

32. A Manual for Students who are preparing for Examination at Apothecaries' Hall, or other Medical Institutions. By WILLIAM MEADE, Member of the Royal College of Surgeons, London. 12mo. pp. 709. London: Renshaw, 1839.

☞ *This is a decided hit for a numerous class. Mr. Mead, we understand, is one of the most lucid popular teachers in this metropolis.*

EXTRA-LIMITES.

Biographical Memoir of Dr. James Johnson, Senior Editor of the Medico-Chirurgical Review.*

"Nec medici, nec imperatores, nec oratores, quamvis artis præcepta perceperint, quidquam magnæ laudis dignum sine usu, et exercitatione consequi possunt."—*Cicero.*

A justly celebrated physiologist and physician† has well observed, that "that man is a scientific physician, who is well acquainted with, and has appropriated to, his own use, the results of all the inquiries which have been made at different times by eminent observers upon the symptoms, course, and causes of diseases, and with the precepts of treatment which they have recommended and employed." And that, "to become a skilful practitioner, he must understand how to bring this knowledge into operation, and be ready to apply all its rules and deductions to each particular case." This is a talent only to be acquired by the most patient observation, the most diligent study, and the most extensive practice; and if any one member of the medical profession is to be regarded as having most zealously laboured to attain this summit of medical knowledge, it is the subject of the present memoir, who has now for many years given to us the fullest evidence of his erudition and practical knowledge by the judicious and able manner in which he has conducted the "Medico-Chirurgical Review, and Journal of Practical Medicine." a work which must be admitted to hold the very first rank and importance in medical periodical literature.

The opinion thus directly given of the merits and qualifications of Dr. James Johnson is not simply a result derived from the perusal of the pages of his review; but has been formed from an acquaintance with his practice, and an association with him in professional matters at various times, and during several years. It is not to be regarded as the language of panegyric—it is truly the payment of a debt of gratitude to one who has so ably led the minds of the medical public to a consideration of what is due to themselves as practitioners, and to those individuals whose happiness and lives have been committed to their care. The importance of an able and just periodical literature of medical science must be admitted by all—it is too generally entrusted to inexperienced hands, and crude theory has but too often usurped the place of practical observation. The press of the present day teems with the productions of authors on medical subjects, and literary discrimination is more necessary than ever, to point out not only to the student, but also to the practitioner, the works of real value and necessary to be perused. This is a task of no little labour or difficulty—great information is necessary on the part of the guide, to accomplish this object in a satisfactory manner. Pope observed, that "the greater part of critics form a general character from the observation of particular errors, taken in their own oblique or imperfect views; which is as unjust, as to make a judgment of the beauty of a man's body from the shadow it happens to cast in such or such a position." As a critic, Dr. Johnson is not open to this censure—he stands indubitably one of the least prejudiced, and the manly way in which he has at

* This memoir is copied from the 12th part of the medical portrait gallery.

† Tiedemann—Physiologie des Menschen.

all times stated his objections to the opinions expressed by others, shows that he does not belong to the class so forcibly described by the poet just quoted.

Dr. JAMES JOHNSON was born in the year 1778, in the parish of Ballinderry, county of Derry, Ireland, on the banks of Lough Neagh. His parents were Protestants; his father, a respectable yeoman, cultivating a small farm of thirty or forty acres. James Johnson was the youngest son of a large family, none of whom, I believe, except himself, are now living. At the age of six years he was put to a grammer-school, kept by a Catholic, the brother of the parish priest. Here he made rapid progress, and, as I learn, was generally at the head of the class. When not so, he was very unhappy, and would sit up till midnight in study. At the early age of fifteen he passed an examination in Dublin, in the classics, and was apprenticed to a surgeon-apothecary (Mr. Young) in Port-glenone, in the county of Antrim. He remained there only two years, when he was transferred to Mr. Bankhead of Belfast, where he continued two years more, and then came to London, without either money or friends. He became assistant to an apothecary in the metropolis, and, by hard study and irregular attendance on lectures in anatomy and surgery, he passed a creditable examination at Surgeons' Hall in 1798, and was appointed surgeon's mate in the navy, in the month of May of the same year. In the Mercury frigate, he sailed to Newfoundland and Nova Scotia, alway, studying very hard, and, when the ship was in harbour, taking every opportunity of visiting the naval hospitals, abroad and at home. Captain Rogers, of the Mercury, who had a great antipathy to the Irish, made an exception in the case of his youthful surgeon's mate, and winked at his absence from the ship for some months in the Winter of 1799, when he studied night and day in London; and in January, 1800, he passed a triumphant examination, for the second time, at Surgeon's Hall. Through the interest of his patron, Captain Rogers, he was appointed full surgeon in the navy, and appointed to the Cynthia, sloop-of-war, on the 27th of February, 1800, as appears by Steel's Navy List. He was then in the twenty-second year of his age. In this ship he accompanied the famous expedition to Egypt, was at the siege of Belleisle, (not the American Belleisle,) and all the various descents which the troops made on the coasts of France, Spain, &c. till they reached Egypt. In the Mediterranean he was taken ill, and was sent back to Gibraltar Hospital, where he did duty for some time, under Mr. Vaughan, surgeon of the Naval Hospital there. From thence he returned to London in the Winter of 1800, and studied in Great Windmill Street, under Mr. Wilson and Mr. Thomas. In the Winter of that year, he distinguished himself as a dissector, and very generally prepared the subjects for Mr. Wilson's and Mr. Thomas's lectures and demonstrations, as the latter gentleman still states with pleasure. It was in this Winter that the present Master of the Rolls (then Mr. Bickersteth,) and Mr. Johnson formed a society of six individuals, who gave demonstrations, daily, in their turn, to a large class of medical students, in the anatomical theatre of Windmill Street.

In May, 1801, Mr. Johnson's slender finances were entirely exhausted, having expended his last farthing on lectures and studies. In the Spring of that year, being anxious to attend a course of midwifery lectures, but not having the means of paying the fee, he stated his circumstances to the late Dr. John Clark, then a distinguished lecturer in Burlington Street, who instantly gave him a free ticket of admission, and invited him to his table. Mr. Johnson never forgot this act of generosity, and has frequently related the anecdote.

In June, 1801, Mr. Johnson applied to the Navy Medical Board for a ship, and tendered a certificate from Mr. Wilson, couched in the following remarkable terse language to Dr. Harness:—The *bearer* of this, Mr. James Johnson, has actually *lived* in the dissecting-room of Great Windmill Street during the last six months. Examine him, and see whether he has studied in vain." Dr. Harness instantly appointed him to the "Driver" sloop-of-war, in which ship

he served in the North Sea, visiting the Orkney and Shetland Islands, and going with a convoy to the vicinity of Greenland and Hudson's Bay.

At the peace of 1802, he was again out of employ, and passed a few months, and spent the remainder of his scanty finances in study in the metropolis. It then required great interest to get employment on the peace-establishment, and Mr. Johnson had none. He applied to the Sick and Hurt Board, and the late Sir Gilbert Blane having entered into conversation with Mr. Johnson, gave him a help, and he was immediately appointed to a fine frigate, (the "Caroline,") fitting for the East Indies. In May, 1830, he sailed for the East; and during the next three years, in India and China, he laid the foundation for his first medical work, *The Influence of Tropical Climates on European Constitutions.*

In 1806 he returned from the East Indies, and having been successful in prize-money, he now entered as a student at Guy's and St. Thomas's and became acquainted with Sir Astley Cooper, Dr. Curry, and other distinguished characters of the period. In the Autumn of the same year he married Miss Charlotte Wolfenden, of Lambeg, in the county of Antrim; and after a year or two of attendance on prisoners-of-war at Plymouth and Portsmouth, he was appointed to the "Valiant," of seventy-four guns, in which ship he remained nearly five years, and saw a great deal of active service. This was one of the two line-of-battle ships that forced their way into Basque Roads, between strong batteries, and burnt the French fleet there. Afterwards, in 1809, he was present at the Walcheren expedition, and narrowly watched the havoc of disease on those pestiferous islands.

In 1812, he published the first edition of his work on *Tropical Climates*, chiefly at his own risk and expense, and immediately on its appearance, he was appointed flag-surgeon, with the late Sir William Young, then in command of the North Sea fleet. Here he did the duty of physician to the fleet, and acquired the friendship and patronage of Admiral Young, which continued till the death of the latter in 1820.

At the peace of 1814, the late King, then Duke of Clarence, hoisted his flag in the "Impregnable," when Sir William Young retired, and Mr. Johnson was so strongly recommended to the Duke, that he was retained, and served with His Royal Highness while conveying the Emperor of Russia, King of Prussia, &c. &c., to this country. The Duke had an attack of his hay-asthma at Boulogne, while waiting for the crowned heads, and Mr. Johnson attended His Royal Highness, and the attack was very soon overcome. The Duke was so much pleased with Mr. Johnson, that he exerted all his influence to obtain for him the rank of physician to the fleet, but was baffled by Lord Melville, then at the head of the Admiralty. The Duke appointed him surgeon-in-ordinary, and always afterwards treated him with great kindness.

At the conclusion of the war in 1814, Mr. Johnson settled at Portsmouth as a general practitioner, and in less than two years got into extensive practice. But his health was not good; and perhaps his ambition was strong, for in July, 1818, he removed to London. This was a bold step. With the exception of Sir William Young, he had no friends whatever in the metropolis: he had a family of five children; and, as he has told me, was not worth five hundred pounds in the world. Since that period—now twenty years or more—his life in a professional point of view, has become well known. He had taken out a Scotch degree in 1813; and he became a licentiate of the College of Physicians in 1820.

Dr. Johnson's first publication was not a medical one. It was entitled *The Oriental Voyager*, published in 1808, and presented an amusing account of his voyages and observations in the East. His next was the work *On Tropical Climates*, published in 1812, and which has gone through five editions. The most experienced practitioners in the diseases of hot climates have uniformly expressed the high opinion they entertain of this work. The application of physiological knowledge to the treatment of disease is beautifully illustrated by

the author. The fifth edition contains the substance of his treatise on Indigestion.

While serving with Sir William Young in the North Sea, he published some papers in the *New Medical and Physical Journal;* and when he settled at Portsmouth, he appeared as one of the editors of that work. The Journal, however, had but little success; and in July, 1818, when Dr. J. came to the metropolis, he took the bold and dangerous step of starting a *Quarterly Review*, entirely at his own risk and expense, and conducted by himself alone! To his astonishment, the first edition of the first number was exhausted in the first week, and the work rapidly rose to a circulation of 1250, 1500, 2000, and ultimately 2500 copies. This journal is the only medical one that has ever been reprinted in a foreign country. It has been republished regularly in New York for many years past, and circulates widely in the United States. His private practice increased with the Journal, and the mental and corporeal labour required for his public and professional avocations was enormous, and such as would have destroyed the health of any one who had not an excellent original constitution, and great facility of composition, verifying what the best prose writer perhaps of the present day has observed that "he who thinks least about it when engaged in composition will be most likely to attain it, for no man ever attained it by labouring for it."* I know, on the best authority, that for years and years Dr. Johnson never even read over the copy of his reviews before it went to press; and so few were the corrections afterwards made, that the cost of these seldom exceeded a few shillings on each quarterly number of his journal. Dr. J. has often declared, that the only secret of his being able to go through such extensive literary labour was his punctuality. Whatever might be his professional avocations of the day, he seldom or never went to bed till the number of pages necessary for the Journal were completed. When private practice was not pressing, he took care to have the Journal far in advance, so that it was always ready long before quarter day. Excepting when on his tours of health, he never relaxed an hour, or hardly a minute, during the day, from work of some kind or other. Indeed, his excursions at home and abroad were not even exceptions to this law; for incessant activity of mind and body has been the characteristic of his life.

Such uninterrupted labour, however, could not be carried on for years with entire impunity. In 1823, after suffering severely from a surgical operation, he recruited his health by a three months' tour in Switzerland, &c.; but in 1826 his dyspeptic complaints assumed an aggravated form, and threatened his life. At this period he was obliged to relinquish, for a time, his professional avocations, and in that retirement wrote his *Essay on Indigestion*, drawn from personal as well as general observations on that afflicting and Proteian malady, the scourge of those who overwork the brain as well as the body. This work, which has gone through nine editions, and has been translated and reprinted in different countries, brought his private practice to the highest point compatible with his health, which of late years has been remarkably good. The first three editions of this work were demanded in the short space of nine months. Few books upon a subject which has been so generally treated of, and upon diseases with which so many are afflicted, have been so popular, yet so entirely devoid of quackery. Beaumont and Fletcher have truly said,

> "What an excellent thing did God bestow on man
> When he did give him a good stomach."

Dr. Johnson felt the want of this blessing, and applied his mind to the relief of

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* The Doctor, Vol. II. p. 201.

his sufferings—this has contributed to the happiness of others, for the treatment he proposes is at once energetic, and founded upon a due observation of the phenomena of disease, and the operations of the animal economy. The last edition of the work has a description of the Baths of Pfeffers in the country of the Grisons.

In 1831 he published his first edition of *Change of Air, or the Pursuit of Health*, which has gone through four editions, and is considered by himself as the best of his literary labours, though apparently written *currente calamo*. This volume was the result of an autumnal excursion through France, Switzerland, and Italy, in the year 1829, and contains many judicious observations on the moral, physical, and medicinal influence of travelling, exercise, change of scene, foreign skies, and voluntary expatriation. The work opens with reflections on education and vocation, and most truly depicts the "wear and tear" of human life. This applies equally to the body and the mind, the connexion between which and their sympathies, in all the modifications of pleasure and of pain, and the relation which obtains between the condition of the intellectual faculties and those functions which constitute the animal economy, are well known to be subjects of great intricacy and difficulty. They belong properly, perhaps, more to the natural philosopher than to the moralist, but the researches of either have hitherto not been productive of any positive information upon the subject. The alliance, however, must be admitted—the connexion is apparent, though the cause be obscure. All the great writers of antiquity have remarked upon the effects of excess on the operations of the intellect. Horace devotes a satire to the advantages of temperance, and he remarks, with that energy which so particularly distinguishes all his writings, that the body overcharged with the excess of yesterday, weighs down the mind together with itself, and fixes to the earth that particle of the divine spirit.

> "———— Vides ut pallidus omnis.
> Cœnâ desurgat dubiâ; quin corpus onustum
> Hesternis vitiis, animum quoque prægravat unâ,
> Atque affigit humo divinæ particulum auræ."—Hor. Sat. ii. l. 2.

No one has, in my opinion, more tersely or more truly expressed the value of health than Sir William Temple:—

"Health (he says) is the soul that animates all enjoyments of life, which fade and are tasteless, if not dead, without it: a man starves at the best and the greatest tables, makes faces at the noblest and most delicate wines, is old and impotent in seraglios of the most sparkling beauties, poor and wretched in the midst of the greatest treasures and fortunes: with common diseases strength grows decrept, youth loses all vigour, and beauty all charms; music grows harsh, and conversation disagreeable; palaces are prisons, or of equal confinement; riches are useless, honour and attendance are cumbersome, and crowns themselves are a burden; but, if diseases are painful and violent, they equal all conditions of life, make no difference between a prince and a beggar, and a fit of the stone or the colic puts a king to the rack, and makes him as miserable as he can do the meanest, the worst, and most criminal of his subjects."

Dr. Johnson not only points out the cause of the "Wear and Tear of Modern Life" but he distinctly states the means of counteracting these effects; and all who delight in the union of literary taste with scientific inquiry will peruse Dr. J.'s work with great satisfaction.

In 1833, he published an amusing tour to the Hebrides, entitled *The Recess, or Autumnal Relaxation in the Highlands and Lowlands.*

In 1836, he published *The Economy of Health, or Stream of Human Life*, which has gone through three editions, and is a very popular production. But ler says.

"There is a kind of physiognomy in the titles of books, no less than in the faces of men, by which a skilful observer will as well know what to expect from the one as the other."

Here is a matter for the metaphysician and the moralist, as well as the physician. The stream of life from the cradle to the grave!

"———————— so gliding on
It glimmers like a meteor, and is gone!" ROGERS.

And 'tis what Shakespeare said of love—

"The uncertain glory of an April day,
Which now shows all the beauty of the sun,
And by and by a cloud takes all away."

For as Felltham has written,

"The life of man is the incessant walk of time, wherein every moment is a step towards death. Even our growing to perfection is a progress to decay. Every thought we have is a sand running out of the glass of life. Every letter which I now write is something cut off from the measure of my existence here."

Dr. Johnson divides it into ten septenniads, and treats of all its various conditions—the evolution and progress of functions—the changes peculiar to the different periods—the diseases of most common occurrence, under varieties and vicissitudes of climate and seasons—and the gradual decay of the mortal fabric. All these important matters are the subjects of Dr. J.'s philosophical observation and speculation, and the manner in which they are treated illustrates the advantages arising from a comprehensive knowledge of the whole science.

During all this time his literary labours in the *Medico-Chirurgical Review* have been indefatigable, though assisted by his son, and by various writers now employed in that work. For the first ten or twelve years, almost every article in that journal was written by himself, for which I have his own testimony, affording, a sufficient proof of the assiduity of his studies, and the remarkable facility of his compositions. He states himself to have been almost entirely *self-taught*, both literary and professional; and from the expiration of his short apprenticeship, he supported himself without ever receiving a shilling from his relations.

Through a long and chequered life, he seems to have offered an exception to the dictum of the poet:—

"Haud facile emergunt, quorum virtutibus obstat
Res Angusta Domi"

for he overcame all obstacles apparently without difficulty, and rose to comparative affluence and reputation, by easy but regular exertion of his intellect. Considering the difficulty and danger of the office of reviewer, I believe that he has made exceedingly few personal enemies—and most of these few have become his friends in the sequel.

In private practice he is one of the most popular physicians of this metropolis His manners are mild and kind to his patients, and he has the art of inspiring great confidence in those whom he attends—an art, which like that of poetry,

"Nascitur none fit."

In his domestic affairs he has been fortunate and happy. His eldest son, Mr. H. J. Johnson, is united with his father as editor of the review, and is very much liked as a teacher of anatomy in the Kinnerton-Street School, and bids fair to

arrive at lucrative and honourable distinction in his profession. His second son Mr. W. Johnson, took honours at Cambridge, obtained a fellowship, and is called to the bar. His third son is a solicitor: and his youngest son is studying under his eldest brother for the profession, at St. George's Hospital. His only daughter is married to a gentleman in the legal profession. Dr. Johnson may, therefore, now be considered as practising for the love of his profession, rather than for the support of a family, who are almost all provided for. He has always been a sedulous attendant on the various medical societies, and an active promoter of medical discussions in these institutions, where, indeed, he seems to be a general favourite.—Though remarkably cheerful in society, I have reason to believe that the subject of this memoir is pensive and rather melancholic in private. This is probably the case with a majority of those whose literary productions and convivial conversations would lead us to think them the gayest of the gay. In religion, general politics, and medical politics, Dr. J. is known to be liberal, though free from scepticism, or ultra-radicalism. In the relations of private and domestic life, nothing is known but what is most honourable to his character.

DELIRIUM TREMENS.

OUR readers must all remember a very unseemly TRIAL of a septuagenarian surgeon of a public institution, for mistaking delirium tremens, or delirium traumaticum for mania. Now we would ask the hypercritics in such cases, whether mania does or does not exist in fully-formed delirium tremens? No man who ever saw the disease would attempt to deny the existence of mental derangement in the case under consideration. Why, in the United States, where the disease is ten times more prevalent than in this country, it is termed "MANIA A POTU." But the sticklers for a definite mark of diagnosis, say, "Oh we can tell delirium tremens from common mania by its *cause*, not by its SYMPTOMS." Indeed! This is rather an unscientific procedure as well as a very unsafe one. We are called to a patient, and asked to examine him and give the name of his malady. But after a close investigation, we say—"Oh you must tell us the *cause* of his complaint, otherwise we cannot tell you its name." This is a precious piece of diagnosis! Then let us observe that it, in the first place, delirium tremens does *not* always acknowledge intemperance for its cause—and that the ordinary cases of acknowledged mania do very frequently result from habits of intoxication. Thus a man who lives well, but not intemperately, meets with a compound fracture of the leg, and consequently is debarred from animal food and wine. He gets delirium tremens or traumaticum, and presents the same phenomena as the man who has been drunk every day. An internal inflammation, as pneumonia, will sometimes occasion all the symptoms of delirium tremens, in good constitutions, but where food and wine are withdrawn, and the lancet and purgation employed. Thus, then, in a majority of cases, the *symptoms* are precisely those of a sudden burst of mania—often taking on the character even of monomania—and the *causes* are often those of common mania, and by no means universally intemperance in spirituous or vinous potations. We have seen several instances of temporary mania assuming the character of delirium tremens so exactly, that nothing but the history of the cases undeceived us. We may mention a recent case. A young medical gentleman was suddenly taken with symptoms of delirium tremens, and we were sent for to visit him. He had red ferretty eyes—cold clammy skin—dry tongue—incessant jactitation—quick small pulse—no sleep for some nights—violent gesticulations—rapid talking—aberration of intellect. He averred that the devil and a coati mondi were under the bed, and that

conspiracies were formed against his life. There was tremor of the hands and agitation of the limbs. In short, a more complete picture of delirium tremens we had never seen—and this we mentioned to one of his friends, while we inquired whether or not he had been lately indulging in drink. We were informed that he was a "Tea-totaller"—a young man of the most temperate habits—but that some moral causes, of a very exciting nature, had lately been in active operation, the precise nature of which we do not deem it necessary to mention. This information modified our treatment, or rather our prognosis. We did not exhibit opium or stimulants, but prescribed soothing and sedative remedies—few of which, however, were taken. In ten or fourteen days he was well. A remarkable occurrence took place during our attendance on this gentleman. A female acquaintance much interested in his fate, visited him and remained several hours at his bed-side. The state of her friend's case made such an impression on her nervous system, that, soon after her return home, she presented a train of symptoms resembling those already described—merely from sympathy. We did not ourselves see the lady after she left our patient's bed-side; but were credibly assured of the above occurrence. Here then we see the effects of purely moral causes—namely, the symptoms of delirium tremens.

The advocates of a definite line between delirium tremens and a sudden outburst of mania have still a strong-hold to retreat to, if beaten from the outworks. The treatment, they say, is different in the one case from that which is proper in the other. On this point we have no fear of joining issue with them. In the first place, what line of distinction can be drawn in the treatment where, as is often the case, the mental derangement, acknowledged as such, results from habits of intemperance? None.—But whatever be the cause of the mental aberration, the essential moral treatment is in all cases the same. The patient must be kept under surveillance—or even under restraint if necessary. In delirium a potu, the tendency to self-destruction is often as strong as in mania from any other cause. The utility and necessity, therefore, of personal restraint is as necessary in the one case as in the other, whenever the aberration is considerable, and violence is manifested.

Thus, then, we find an identity of symptoms—often an identity of cause—and frequently a similarity of treatment in mania "*a potu*," and mania from any other cause. It is hardly necessary to observe that the adjunct "tremens" is obviously improper, since it is by no means a necessary accompaniment of mania "*a potu*." It is often present in other complaints, or even where no complaint is made by the patient, but where habits of intemperance are established.

If the above observations are correct, or founded on observation, (and we believe they are)—if mania a potu cannot always be distinguished by its symptoms or its causes from any other case of mania—and if the moral treatment, as far as restraint is concerned, be the same in both—then we say that Sir Anthony Carlisle has been hardly treated for mistaking a case of delirium tremens or traumaticum for one of mental derangement. The great ground of complaint against Sir A. has been the order to remove the patient from the ward of an hospital to an asylum. Now we confess that we do not see clearly the justice of this complaint. We conceive that, during the existence of the delirium or mental aberration, no place can be worse, either for the patient himself, or the other inmates of the institution, than the ward of an hospital. The room, or even the dark cell of an asylum is infinitely preferable during the temporary insanity.

We allude only to the diagnosis of delirium tremens and temporary mental derangement, in this case. If the medical officer was guilty of negligence in his duty, the charge should have been placed on its proper basis, and no side wind ought to have been taken advantage of, to bring forward an accusation of ignorance.

Some Cases by Dr. Beemner.

Case of Introsusceptio cured by forcing Air into the Intestines.

James Thompson, æt. 44, of a rather spare habit of body, but in the general enjoyment of good health, was suddenly taken ill with pain in his bowels, about ten o'clock in the evening of the 25th Nov. last. He took some spirits, warm drinks, bathed his feet in warm water, and applied warm fomentations to the belly, thinking the pain would wear off. It continued to increase however, and I saw him on the morning of the 26th. I found him labouring under the following symptoms. Pulse full and not particularly hurried—tongue clean—face anxious—belly not distended, and partially relieved by severe but equitable pressure. No alvine discharge since 4 P. M. the preceding day—pain about the umbilicus most excruciating—not steady, but at intervals of from three to four minutes, accompanied by severe vomiting and great thirst. I immediately ordered a purgative glyster, which came off almost immediately, bringing with it the contents of the rectum without abating the pain. I ordered its repetition—part returned the same as thrown up, and part remained; but the violent pain still continued. I then applied a blister over the whole surface of the abdomen, and gave him a powerful opiate; after an hour this settled the vomiting, and in some degree dulled the pain. I then gave him s. m. hyd. gr. xii. and left him. Twelve hours after the pain and vomiting had returned as violently as ever—still no pain on pressure. I then endeavoured to open the bowels by throwing up as much warm water by the domestic machine as I possibly could; he complained of straitness, and part of the water returned without any effect—I then repeated the calomel and left him. On the morning of the 27th, the calomel had proved useless, and the vomiting and pain were as violent as ever; thirst severe, and perspiration profuse. On pressing the belly pain was now felt in the region of the caput cæcum. It now was evident that unless he was speedily relieved death must ensue. I again attempted to overcome the obstruction by throwing up about a gallon of warm water until it was forced back and a considerable part discharged without the least relief. Having some little time ago seen the injection of air suggested in cases similar (I think in a recent Number of the Medico-Chirurgical Review, although I cannot lay my hand on it just now), I determined to try it. Having nothing at hand but a common bellows, I inserted the tube into the rectum, and commenced gradually to force up the cold air. As soon as it found its way into the intestines, the patient said he felt somewhat easier, and I persevered until I could force no more. In a second or two the rarified air, was forced back with great violence bringing with it the remaining portion of the water I injected, but nothing more. He said he felt rather easier and urged its repetition. This I did for other two different times with no appearance of relief. On the fourth trial, however, the room was filled with a most fetid smell and of very free discharge of fæculent matter—he felt relieved, the vomiting ceased, and he complained only of general soreness. I now gave him 8 grs. of cal. with one grain p. opii. and left him. That evening he had an alvine discharge, and the following morning he got ol. ricini, ʒj. which operated freely in the course of the day, and the cure was complete.

Whether the foregoing case was real introsusceptio or not I am not prepared to say, but I am sure of this, that, had I not succeeded by the forcing up of air into the intestines, there were no other means that I am aware of whereby I had the least chance to save the poor fellow. I have given the case at this length, as I conceive the plan pursued worthy the attention of the profession in similar cases. It would be absurd to draw a conclusion from a single case, but from what occurred to me in this instance, the practice appears to be perfectly harmless, since the moment the air became rarified it came off with great force, and left no disagreeable consequence behind.

POST MORTEM EXAMINATION OF A CASE OF DROPSY.

Mrs. Rae, æt. 68, applied to me about the end of Nov. last; she complained of difficulty of breathing. I found her emaciated—pale—pulse weak—tongue dry and morbidly red—urine scanty—belly swelled and tense—fluctuation distinctly felt. She had been married, had several abortions, but never bore a child at the full period. As the swelling of the abdomen was not sufficient to account for the great difficulty of breathing, on examination I had every reason to think there was water in the chest; from this and her general broken down state of health, I did not consider myself justifiable in drawing off the water, but ordered a few of the pil hyd. with a mixture of squills and digit. and made her drink freely of the sup. tart. pot. in gruel without any beneficial effects—she expired on the 2d Dec. On laying open the chest the right lung appeared healthy, with scarcely any water in that pleural cavity. The left lung was greatly diminished in volume, the cavity being completely filled with urine. The heart and aorta were healthy, with scarcely any water in the pericardium. The abdominal cavity was completely filled with serum, but not particularly distended. The abdominal viscera generally presented nothing peculiar from ordinary cases of dropsy, but those on the pelvis were one mass of disease. The bladder was much enlarged, and adhered in the greater part of its posterior surface to the left ovary, which was distended much in the form of a pear, the upper portion pointing towards the umbilicus, its diameter at the middle was nearly four inches, and its long diameter about six and a half. To its posterior surface in its whole extent the rectum firmly adhered, and was with difficulty dissected off. On laying the tumor open, it proved to be a complete cyst filled with serum, and the bottom of this cyst was a congeries of smaller ones, varying from the size of a pin's head to that of a pea, presenting the appearance of a half-expanded cauliflower. The uterus was so contracted and embedded in the mass that it was with difficulty distinguished. The right ovary was about the size of a walnut, much of the same shape and filled with a soft substance exactly resembling brown paint. The bladder contained a good many loose particles of sand, some of considerable size, and more than two-thirds of its whole extent were covered with a calcareous deposit, not in lines or in one particular place, but in patches, varying in size from an eight to two inches in diameter. When these patches were taken out, the scalpel would not pass through them, and they broke over like a piece of mica; when touched on a yielding surface by a metallic body they gave a sensation like that the sound does in striking a stone. The woman to my knowledge never had a symptom of calculus, or complained of any disease of the urinary organs.

In this case, there were many loose particles of sand, and those of sufficient size, had they passed into the urethra in an awkward manner, to have called attention to the bladder, and had the sound been used a stone would have been indicated. Had an operation been undertaken, no knife would have passed through the neck of the bladder had it been considered necessary to cut that part, as it was completely surrounded by calcareous deposit. But independent of this it is possible that, in similar states of the bladder, an operation might be undertaken, and still no stone there. The only thing valuable in this case is the extent of the deposit and its disposition, which may direct the attention of others to diseases of a similar nature.

JAMES BEEMNER, M.D.

Huntly, N. B. Dec. 5, 1838.

REMARKABLE STATE OF DISEASE IN A PHYSICIAN.

DR. R——m, 64—ailing for ten years—for first five years, restlessness or fidgets—could not sleep but a few minutes in one position—increasing in corpulence during that time, though he could take very little food. Only took two glasses of Sherry for drink. About five years ago began to refer to the sigmoid flexure of the colon as the seat of uneasiness. Would take no medicine, but trusted to abstinence for relief. Referred to the region of the duodenum, in which he fancied there was a kind of intussusception. He felt pain in that part. He suspected also that he had hydrothorax. Severe head-aches and dry retching after the least indulgence in wine—say, three or four glasses. In the month of February 1838, complained of cough, difficulty of breathing, depression of spirits, and inability to use exertion of any kind.

Last illness—beginning of September removed to Aldbro', very ill. Pain in the chest so great as to impede the breathing—increased pain in the colon. Took active purgatives and colchicum there. About the 6th of September, began to shew symptoms of jaundice. Frequent retching—could only keep down some strong coffee or soda water. The limbs now began to emaciate, but the body retained its embonpoint. The jaundice daily increased, till the skin was a deep copper-colour. The urine became like clear port wine—pulse never varied from 70 to 75. About the 10th of September, and before he took the above medicines, he passed spontaneously a strange sort of motion, without smell or colour. He was freely leeched, and the leeches bled copiously. Had repeated hæmorrhages from the bowels, of a dark melenic character. Never could sleep more than a few minutes at a time, for a month before his death. Believed that he had scirrhus of the colon for years—but did not draw the attention of the medical gentlemen to this till about a week before his death, when Mr. Evans detected an induration in the angle made by the transverse arch and descending colon. This induration rolled about and eluded the grasp. These symptoms went on increasing till death, which seemed to take place more from inanition than from the disease. He was latterly supported entirely by beaf-tea *per anum*. He died on the 11th of October, 1838.

DISSECTION TWELVE HOURS AFTER DEATH.

Skin of a deep copper-colour, approaching to mahogany. The body was not emaciated; but the limbs were much attenuated. The integuments of the abdomen were loaded with fat; and this was deposited in great quantities throughout every part of the abdomen. Stomach collapsed—large intestines distended with air—liver very much exsanguious, and exhibiting the granulated structure clearly. From each cut a glairy, greenish, nearly transparent fluid oozed out.

Gall-bladder presented a contracted appearance. Its coats were very much thickened, and it contained only about a dessert-spoonful of bile, resembling paste in consistence. The ductus cysticus, hepaticus, and part of the ductus communis were completely obliterated by the pressure of a cluster of surrounding glandular bodies, and by an indurated pancreas, forming a large and dense mass around the ducts in question, and completely annihilating all communication between the liver and the duodenum. Stomach, duodenum, ileum and cæcum healthy. The colon was healthy till near its termination in the rectum, where there was a circumscribed ulcer about the size of a crown-piece, at which place the gut was so contracted as only to admit the ring-finger. The ulcer presented slightly thickened and everted edges, and the mucous and muscular coats of the intestine having been destroyed, leaving the peritoneal covering only

entire. The pancreas was enlarged and indurated, completely surrounding the bile-ducts, and obliterating their canals. The right kidney was enlarged, and the ureter distended with a green fluid resembling cystic bile. As the ureter approached the bladder, however, it became so contracted as scarcely to leave any passage for the urine. The substance of this and the other kidney did not present any material change of structure, but on the convex surface of each was a cyst filled with transparent fluid—one of them as large as a nutmeg. The head and chest were not examined. (Signed) F. BELL.

The foregoing case of our brother practitioner is not a little remarkable, and will furnish the reader with several subjects for reflection. Not the least curious phenomenon in the history is the long continuance of that restlessness at night, called the "FIDGETS," without any local or tangible cause for such uneasiness. It is tolerably clear, however, that lesions, of various kinds, were going on for many years, in some important organs of the abdomen. We could get but a very imperfect history of the case—and that entirely from the memory of a friend of the deceased, so that perhaps a more minute detail of the symptoms would have developed some interesting symptoms in this complication of maladies. The preservation of such quantities of fat in the abdomen, while the upper and lower extremities were like those of a skeleton, is curious. It is sufficiently evident that the bile-ducts must have been obliterated for a considerable time, and this renders the fact of the obesity still more curious, since theory, experiment, and observation had taught us that, when no bile passed into the duodenum, emaciation was an invariable consequence.

REPORT OF THE MEDICAL AND SURGICAL SOCIETY OF NEWCASTLE-UPON-TYNE,* ON THE PRESENT STATE OF THE MEDICAL PROFESSION.

THIS Society, on surveying the condition of the Medical Profession, cannot but be strongly impressed with the varied and incongruous materials of which it is composed; they find its members, notwithstanding the perfect identity of their avocations, consisting of practitioners authorised by many different Colleges and Corporate institutions, from whom have been required unequal courses of study, and dissimilar examinations into the extent of their professional and scientific attainments. They discover also that these institutions have been found inadequate to the fulfilment of their intended purposes; that, consequently, persons are engaged in practice, who have not been authorised by any of them, and that a numerous class of individuals are allowed to prey upon the community, under pretence of having become acquainted with operations and modes of curing diseases, unknown to those who have endeavoured, by an appropriate education, to qualify themselves for the treatment of the various infirmities and injuries with which the human frame is liable to be afflicted.

Public safety demands that all persons engaged in the practice of Medicine and Surgery should be duly qualified, by a previous course of study, to discharge the important duties they are called on to perform; and this Society deem it incumbent on the Legislature to provide, that no person shall be permitted to enter upon the execution of those duties, who has not been properly tested as to his acquirements, and publicly declared to possess the requisite degree of qualification.

In consequence of the imperfection and defective administration of the laws at

* The Society consists of more than fifty members.

present in existence, they have afforded no security to the public, and have yielded no adequate protection to the legally-authorised practitioner, against an unfair and unjust competition with individuals possessing neither licence nor diploma, and who, are unable to produce satisfactory evidence of their having devoted sufficient time or attention to the attainment of medical and surgical knowledge.

Quackery, of every description, is allowed to exert its baneful influence on society; and, while its miraculous achievements are continually paraded before the public eye, thousands of its credulous and unsuspecting victims are daily submitting themselves to the pain and torture of secret processes of treatment. It is to be deplored that any part of the public revenue should be derived from the indirect encouragement of a system replete with fraud, and productive of most disastrous consequences.

Chemists and druggists are in the constant habit of prescribing for diseases, with whose nature they can be very imperfectly acquainted.

The Corporate Bodies presiding over the profession appear to be quite unequal to the correction of these abuses. The London College of Physicians have at all times acted on a system of exclusiveness and monopoly, and have never displayed the slightest anxiety for the well-being of the profession at large. The charter of the College of Surgeons confers upon that corporation no control over persons practising surgery; submission to their examinations and bye-laws being entirely *voluntary*. The Company of Apothecaries have, by Act of Parliament, power to prosecute all persons practising as Apothecaries without their license. They have, however, exercised this power in a very limited number of instances, nor do they possess the means of exerting it in a manner likely to counteract the magnitude of the evils in question.

Medical education requires considerable amendment. The long space of time occupied in the apprenticeship of most general practitioners is usually passed in a very unprofitable manner. Apprenticeships are objectionable in many respects and are totally inefficient as a medium of professional improvement; hence, after their termination, a course of study requires to be entered upon, which must, of necessity, be compressed into a period by far too limited for the attainment of the object in view. The information acquired is almost inevitably of a superficial character, for, in addition to hospital practice and dissections, the student is compelled to attend several lectures daily on a variety of subjects; from all these it is impossible that he can derive full advantage. Clinical instruction is much neglected, and the student completes his prescribed curriculum with a very inadequate preparation for the practical duties awaiting him at the bed-side of the sick.

Certificates of attendance on lectures and hospital practice are frequently granted without enquiry as to the student's diligence, and in some instances are surreptitiously obtained.

The examinations for licences and diplomas are conducted not unfrequently in a cursory and inefficient manner. They do not afford an opportunity of ascertaining the *practical* acquirements of the candidate, nor the extent to which his knowledge is the result of *clinical* observation and experience. The College of Surgeons in London, require certificates of candidates, having studied the various departments of medical science, but their examinations are confined to anatomy, physiology, and surgery. The Society of Apothecaries take no cognizance of surgery, therefore their licentiates being legally qualified, are at liberty to practise *every* branch of the profession, without having been examined in surgery, or required to produce evidence of having been engaged in the study of that important subject.

There are in the United Kingdom of Great Britain and Ireland, not fewer than nineteen Corporations having power to grant degrees in medicine and surgery, and differing essentially in the extent and duration of the curricula they enjoin.

The Society is of opinion that all of these might be advantageously superseded by one institution being placed at the head of the profession in each division of the Empire, whose privileges should be reciprocal, and whose executive officers, elected by the members at large, should hold periodical conferences, for the purpose of establishing uniformity of operation; that such Institutions should have entire control over education, and the granting of degrees and licenses to practise, together with all other matters relating to the medical profession; that the course of instruction and test of qualification should be the same in each; that from one or other of them, all persons engaged in the practice of medicine and surgery, should be required to possess a diploma or licence; that, to individuals thus authorised, the law should extend a suitable protection, and that proper measures should be enforced for the suppression of unqualified practitioners.

The Society would suggest, as a means of effecting the last-named object, that every person before commencing practice in any town or other locality, should be required to obtain a certificate from a magistrate giving him permission to that effect, which should be granted on the production of satisfactory testimonials of qualification, and that, after having been thus authorized, his name should be duly registered. Persons presuming to practice, whose names have not been so registered, should be subjected to a penalty on summary conviction before a justice of the peace.

The rapid progress of science during the present century, in conjunction with increased facilities for the attainment of medical and surgical knowledge, have fully proved, that any attempt to constitute an arbitrary division of diseases, and to consign the treatment of them to different classes of practitioners, according as they affect the external or internal parts of the body, is not only unscientific but impracticable; and, as the physician and the surgeon must be guided by similar principles in combating disease, whether involving the surface or the interior of the human frame, the education of all practitioners should, in the opinion of this Society, be regulated by one common standard. Those distinctions in rank which have hitherto subsisted (not perhaps without good effect) would thus be rendered unnecessary, since there could be no longer any rational ground for separating into different grades, men who would be identified not less in education, than in the nature and object of their pursuits. Such uniformity, if established in this as *in other countries*, would place practitioners, whether of medicine or of surgery, on an equal footing; but would not, in the least degree, prevent individuals devoting their energies to the prosecution of any particular department of professional duty, which inclination or other circumstances might lead them to adopt in preference to another.

The task of preparing the medicines, prescribed by the general practitioner, devolves, almost universally, on the apprentice of the latter. That material benefit might accrue from a well-devised scheme of pupilage, there can be no question; but apprenticeships, as at present conducted, have ever been productive of unhappy results; and in no respect does the unfavourable tendency of this system appear more conspicuous, than when viewed as an instrument for executing the responsible duty of dispensing. The abolition of apprenticeships, so far, at least, as this department is concerned, would be highly expedient. The Society is of opinion, that a charge so important might, with greater safety, be confided to an apothecary or dispenser, who had been examined in pharmacy, and had obtained a specific license for the purpose in question. Such substitute for the apprentice would, the Society believes, be most desirable, not less for the comfort and convenience of the practitioner, than for the welfare and security of his patients.

This proposition, if acted upon, might have an additional good effect in terminating the absurd method by which at present the majority of general practitioners seek to be remunerated, viz., by a profit on the medicines they supply.

The foregoing representations suggest the desirableness of obtaining,

1. An improved system of education.
2. A more efficient method of examination.
3. One governing body to preside over the whole profession of England, Scotland, and Ireland.
4. Uniformity of education, and of grade among practitioners.
5. Adequate protection for legally authorised practitioners.
6. The prevention of unqualified persons.
7. The suppression of quackery.
8. The separation of the practitioner and the dispenser in the same individual.
9. The abolition of apprenticeships as at present constituted.
10. The institution of licensed Dispensers.

The Society is desirous to submit to the notice of the profession generally, the preceding statement of some of the more prominent evils, which have, for a length of time, weighed heavily on the interest both of the public and of individuals, with a brief outline of the measures calculated, in the opinion of its members, to correct the abuses complained of. As, however, their effectual reformation can be obtained only by the vigorous and united exertions of the whole profession, and not by detached and unconnected efforts, the Society is anxious to invite the co-operation of professional gentlemen in other places, and to recommend to their immediate attention the important questions comprised in this Report. The feeling of the profession at large, as to the defects most urgently requiring amendment, and as to the general principles on which such amendment should be founded, would, in this way, become apparent; and with a view to the settlement of disputed points, the Society would suggest the expediency of a conference being held in London, or elsewhere, composed of deputations sent from different parts of the Empire, whose labours might be directed to the arrangement of a specific plan of Medical Reform, which, if incorporated in a Bill, to be introduced into Parliament, and duly supported by petitions, might be reasonably expected to meet with the consideration of Government and the Legislature.

(Signed) T. E. HEADLAM, M.D., President.
T. M. GREENHOW, Secretary.

Newcastle-upon-Tyne, November 27, 1838.

MEMORIAL OF THE MEDICAL OFFICERS SERVING ON THE BENGAL ESTABLISHMENT TO THE COURT OF DIRECTORS OF THE EAST INDIA COMPANY.

IT is not for us to tell the medical branches of the military and naval services that they have been always treated with little consideration or respect. Look at the army—look at the navy. The officers in each, particularly in the first, enjoy aristocratic connexions and consequently possess parliamentary influence. The results are felt in the tenderness with which the factions of the day approach their rights and privileges. But the zealous, useful, scientific surgeon, who cannot influence votes on a division, is snubbed or actually maltreated, by the heads of his department, and the supreme executive.

The evil can be remedied by union only. Medical men have hitherto proved but a rope of sand, and timidity, or indolence, or despair has prevented any

thing like combination. Experience proves that the executive and the legislature equally resist every thing save effective agitation. It is only by rendering the ruling powers uneasy, it is only by the ruled exhibiting their strength, that any boon can be obtained. This is rather a lamentable than a pleasant reflection, but it furnishes such hints for action as cannot well be misconceived.

The case before us, the subject of the present memorial, appears to be a very gross one. It would seem that a "boon" has lately been granted to the officers of the Company's army in India. That boon consists in granting a pension of £365. per annum, to all commissioned officers, whatever their rank, after thirty years' actual service. This boon cannot be considered excessive. What constitutional havoc must thirty years of service in an Indian climate effect. How many must sink in that lengthened period, how few even of the survivors can expect a prolonged enjoyment of the inconsiderable reward! Our readers would not, could not guess, that from this reward, obtained with such delay, purchased at such cost, and likely to be possessed so briefly, the medical officers are excluded! Such is the disgraceful fact. Those men who brave the toils and hazards of military service, in addition to the anxieties and dangers more peculiarly their own—those men are marked out for costumely and injury, and grossly forbidden to participate in the hard-earned fruits of service open to their brother officers! It is impossible to defend this cruel insult, this biting wrong. It is the subject of the Memorial to the Honourable Court of Directors which we subjoin, and if that memorial is ineffectual, if its prayer is disregarded, it will be the most unjust, arrogant, and impolitic exertion of brute power, that any government however constituted could practise in the face of day. We cannot believe it possible that this petition will fail.

DRAFT OF MEMORIAL.

TO THE HONOURABLE THE COURT OF DIRECTORS OF THE EAST INDIA COMPANY.

The humble MEMORIAL of the Medical Officers serving on the Bengal establishment,

Most respectfully sheweth,

That your Memorialists, in approaching your Honourable Court on this occasion, are impelled by motives of a force and character never before felt by your Medical Service within the experience of its present Members. Your Memorialists refer to their peculiar and unaccountable exclusion from the benefits of the late Boon,—of a specific scale of pensions for periods of service without reference to rank,—which has been conferred on the Officers of the Indian army, in which your Memorialists hold their commissions.

2nd.— Your Memorialists trust that no charge of precipitancy or disposition to hasty or frivolous complaint, can lie against them in this appeal to the justice as well as generosity of your Honourable Court; when it is considered, that the privilege of pension according to length of service has been available to, and extensively enjoyed by, their more fortunate brother Officers during the period of a year and a half past, while many of your Memorialists, the Seniors even of such retiring officers, are obliged to continue their cheerless toil in this destructive climate, with sinking energies and declining health. It affords evidence equally of the disappointment and deference of your Memorialists, that though the confidence of your Honourable Court's favour extending alike to all departments of the Army, coupled with the absence of specific allusion to the Medical department in your Honourable Court's despatch of the 23rd December 1835, on the subject of the Boon, rendered an appeal by Memorial to the local Government necessary for the ascertainment of the fact of their exclusion or otherwise

from its benefits, they have abstained from all direct appeal to your Honourable Court, till they have learned with the deepest concern, that the removal of the present invidious and, your Memorialists trust they may say, unmerited and groundless distinction, is not otherwise to be expected.

3rd.—Your Memorialists beg therefore now to urge with all deference upon the notice of your Honourable Court, that the whole Medical department of India—although some of its Members are occasionally lent for a time to the Civil branch, in like manner as purely Military Officers themselves are sometimes so transferred—is essentially a Military body, suffering all the hardships and privations and dangers of the Military life; and this in addition to the fatigues, anxiety, and deep responsibility—intelligible to few that do not participate therein—of its own peculiar duties in periods of peace as well as war. Their position also as Commissioned Officers of the Army would lead your Memorialists to confidently hope, that it cannot be the ultimate design of the Honourable Court to exclude them from sharing in a Boon of this nature, granted to the Army.

4th.—The essentially Military character of your Medical department cannot be doubted. On the occasion of the late arrangements regarding full and half batta at the different Stations of the Army it was not questioned; your Memorialists, therefore, cannot view otherwise than with surprise and regret the distinction that is attempted, it appears, to be established in regard to the Boon.

5th.—But, independently of the indefeasible identity of the Medical and Military Services giving both an equal claim to such indulgence as that in question, your Memorialists humbly conceive, that there are in their own position circumstances both essential and incidental, that would render the terms of the Boon applicable to the Medical branch in an especial manner. The first of these is the small number of grades in the Medical compared with the purely Military Service, and the consequently longer period required to pass through them, than through the equivalent Military grades, to the higher ranks. In evidence of this we would adduce the fact, that the 10 Bengal Senior Surgeons are men of 30 years' service or upwards, and that these men, in return for such protracted service, if excluded from the operation of the Boon, are entitled to no higher reward than a pension of £191. Nor, by present rules, would they be entitled to more, till they had attained the next higher grade of Superintending Surgeon, (which many of these would not reach in less than seven years), and served therein moreover for the space of two years! Whereas the purely Military Officer of the same period of service, whatever his rank, may retire, under the operation of the present Boon-regulations, on an annual pension of £365. The superiority of the Boon-pension to that of the present rules in the case of these individuals, would indeed be as £450 to £191, taking into consideration the calculated difference of five years' service in favour of Medical Officers, which has ever been allowed, owing to the necessarily later period, by six years, of their admission into the Service. The peculiar hardship of the present Medical Retiring Regulations, as above shewn, cannot fail, it is hoped, to forcibly strike your Honourable Court, and to obtain the concession now so urgently and equitably, they trust, solicited by your Medical servants.

6th.—Another circumstance alluded to above as rendering the indulgence in question peculiarly applicable to the present state of your Medical Service, is the abolition in January and March 1835 of two of the then eleven Bengal Superintending Surgeoncies. Though one of the remaining nine Superintending Surgeons, it is well known, could not even make the tour of the wide field of duty since assigned him, were he to march *every day in the year*, it is of course beyond the province of your Memorialists to discuss the question of state policy or economy which may have dictated the measure in question. They permit themselves indeed no farther remark on the subject beyond the simple statement of the fact, that the attainment of the higher grade,—the point on which Medical pension is at present made dependent,—is thus retarded to nearly twenty-nine

thirtieths of Medical Service, to the same degree that promotion would be retarded to those of lower grades among the purely Military Officers by the sudden abolition of 18 Majorities from the Army-list. It was on men of 30 years' service and upward that this stoppage of Medical promotion first fell; and upon such also that the consequent retardation operates with greatest force. When to this retardation is added the singular and anomalous condition to the attainment of the pension of Superintending Surgeon required by present rules, namely two years' actual service in that grade, your Memorialists cannot but confidently hope that your Honourable Court will see herein irresistible reason in favour of extending to the entire Military department the principle, already adopted towards the majority of it, of a specific scale of pension graduated according to actual duration of service and not according to the accident of rank attained.

7th.—Indeed your Honourable Court, when deliberating in what manner a Boon would be best conferred upon your Army, adopted for the first time, the principle of granting pensions according to length of service. Your Memorialists form a part of that Army, and they hope that they advance no unreasonable pretension, when they urge that the reward for their services should be founded on the same principle. Under this persuasion your Memorialists would here beg to observe, that none of the ten Senior Surgeons mentioned in the preceding paragraph can expect, according to the experience of many years past, to advance through the service of next grade (that of Superintending Surgeon) in a less period than forty years from the date of their entering the Service, by which time, if any should survive, they must be nearly worn out by age and so protracted a sojourn in this climate. Should your Honourable Court be pleased to consider the situation of these individuals as deserving of the remedy for which we now petition, your Memorialists with equal confidence appeal, in forcible support of their prayer, to the case of the Superintending Surgeons, who have no health left to enable them to wait for the increased pension of a Member of the Medical Board, and who are at present denied the pension of £450 a year which has been granted to their Military brethren.

8th.—In addition to what has been above stated, another important but probably little known fact may be urged in favour of the Junior branches, namely—that, according to the rate of promotion from the grade of Lieutenant to that of Captain, and from the grade of Assistant Surgeon to that of Surgeon, calculated by the promotions from the head of each list for the last eight years, the Cadet will on an average reach the Captaincy two years earlier than the contemporary Assistant Surgeon will attain the Surgeoncy; which, with the difference on entering the Service, gives a total difference of age of eight years between the contemporary individuals of these parallel ranks. Indeed the obstacles to retirement among the Senior Medical Officers above alluded to, now produce such obstruction to the promotion of the more than 300 members of the Service below them, that this disproportion will be very much increased. In a few years Assistant Surgeons will be found of much more than 20 years' standing: in fact after having served more than 17 years in the country, the period which under existing regulations entitles them to retire on the *pension of their rank*, such pension will be only that of a Lieutenant, or £120. a year! It may perhaps be offered in reply to the above-mentioned difference in age of the parallel Medical and Military grades, that the Assistant Surgeon receives an advantage in pay over his purely Military compeer; but this is a deception; for taking the calculated average of Military and Medical receipts, (the former at 210* rupees a month for the first five years and of 380 rupees a month for the next ten, or till the Captaincy be obtained; and the latter at 450 rupees a month *ab initio* to the period contemplated) it will be found that the Military Officer will on

* These sums are the calculated averages of these grades throughout the Service, all Staff allowances of course included—both Medical and Military.

attaining his Captaincy—say after 15 years' service—have received from the State the sum of Rs. 57,200, while the medical Officer of the same age—supposing the parties to have entered the Service at the respective ages of 16 and 22—will have received only the sum of Rs. 48,600, or, allowing only five years between the parties, Rs. 54,000; and this disproportion will become greater, as the retarded promotion of the Medical Officer, already pointed out, keeps him longer in the lower grade. It may here be mentioned that it has been found also by a careful calculation, that, during the entire course of Military and Medical service, the actual receipts of the Medical do not exceed those of the Military Officer, who has also rank and honourable distinctions to aspire to altogether unattainable to the former.

9th. Did it appear desirable to strengthen still farther the argument of necessity—already your Memorialists feel more than sufficiently forcible—in favour of the concession solicited from your Honourable Court, they need but advert to the General Orders of the 29th November, 1828, instituting a measure of retrenchment, whereby—apart from all discussion of the principle or question of the necessity—the real fact is, that the two junior thirds of the Medical department were suddenly deprived of 33 per cent. or two-thirds of their then allowances. All the Services suffered severe retrenchment about or subsequent to the period mentioned; but in no way to be compared with that inflicted on the Medical branch.

10th.—Your Memorialists would also beg to draw the attention of your Honourable Court to the recognition and adoption of the principle of pension for service not for rank, that have lately taken place in the Medical department of the Royal Army, where, as in this, it is impossible that all should attain the higher grades. To remove all disheartening circumstances, therefore, tending to weaken Medical men in the efficient discharge of their duty, and with a view to guarantee to every rank a fair and proportionate remuneration, it was determined, that, in lieu of rank and promotion, Surgeons and Assistant Surgeons should be paid and pensioned according to length of service.

11th.—While your Honourable Court has adopted this unvarying and equitable principle towards your Memorialists' brother Officers, and while all the reasons and circumstances above detailed seemed to point *a fortiori* to the necessity and propriety of its application to the Medical branch, your Memorialists depressed and embarrassed, in vain sought for an adequate explanation of their exclusion from this Military Boon. To neither lack of zeal nor to possession of wealth—non-existences both—on the part of your Memorialists as servants of the State, could your Honourable Court's oversight of their deserts and interests in the present case be attributed. In this state of anxious uncertainty, but with the hope of a more satisfactory termination to it, did the rumour reach your Memorialists of your Honourable Court's sanction of the Medical Retiring Fund, affording the explanation that had eluded their research.

12th.—Your Memorialists, it may be guessed, could not for a moment imagine that the Honourable Court considered the slight assistance afforded to the Subscribers of the Medical Retiring Fund, as an equivalent to the Medical Service generally for the loss occasioned by exclusion from the benefits of the Boon, which has been granted to their Regimental brethren; and, in confirmation of this opinion, they beg will all humility and deference to submit the following observations.

13th.—The establishment of a Medical Retiring Fund, although received by your Memorialists with sincere gratitude, can by no means be deemed an equivalent for the scale of pensions now granted to other Officers of the army:—first, because the latter is a free gift, while the former [The Fund] must be purchased and paid for; and secondly; because the Boon from its nature is universally available, while the Fund costs a price that must necessarily and for a long period render it partial and limited in its operation. The Boon granted to our brethren, is a free, clear, and unqualified gift available to all; while the favour

bestowed in sanctioning the Fund, although the advantages of that institution (still in prospectu) are gratefully acknowledged, must notwithstanding be purchased by Medical Officers individually at such a price, as will necessarily place it beyond the reach of many; for there are unfortunately not a few amongst your Memorialists, who, although anxious to subscribe to it, are yet unable to do so, either from the embarrassment of debt or from the necessity of remitting all personal savings to England for the support of their families. These unfortunate individuals, who are thus reluctantly compelled to forego the advantages of the Retiring Fund, (if excluded from the benefit of the new pension regulations) will find themselves the only Commissioned Officers of the Company's Army, who may serve faithfully for a period of 30 years and upwards, attain an age of from 55 to 60, and be yet only entitled to retire on a pension of £191. per annum.

14th.—Your Memorialists would beg further to remark, that it does not appear that your Honourable Court, although they have sanctioned a new scheme of retirement, have prohibited the establishment of a Retiring Fund among Officers purely Military, should such hereafter be found practicable. Nay, it would appear that encouragement is given to the purchasing out of Military Officers, the principle of the Medical Retiring Fund being thus in practice extended to the Army generally, and probably with more effect, than will ever be exerted by the Medical Retiring Fund in favour of your Memorialists, if a judgment be formed from retirements (two) that have yet taken place through its agency; though it has been currently in operation for two years, and was made retrospectively so for three more. Even in the two instances in which the Fund annuity has been accepted, one only of the retirements can be fairly attributed to its influence. Thus another reason, in the hitherto comparative failure of the Fund, offers itself in favour of the extension of the Medical branch of the Boon granted to the Army.

15th.—The only direct pecuniary aid afforded by your Honourable Court to the Bengal Medical Retiring Fund, is interest at six per cent. on such balance as may from time to time be at its credit in the Government Treasury. This advantage your Memorialists are prepared at once to relinquish, should your Honorable Court think such exaction necessary in extending to them the benefits of the Boon; and they doubt not but that their Medical brethren of the other Presidencies will readily, under the same terms, give up such pecuniary advantages,—in donation, interest and rate of exchange, as your Honourable Court may in their liberality have conferred on them, on the institution of their respective Medical Retiring Funds. Such an arrangement is strongly recommended by its constituting an important step towards establishing that equalization of the circumstances of the Services throughout all the Presidencies, which has professedly been the object and basis of all your late enactments.

16th.—In conclusion your Memorialists beg to reiterate their confident reliance on the justice, liberality, candour and consideration of your Honourable Court in deciding on the prayer herein preferred; and finally to express their earnest hope and conviction, that, in the important matter of fixing the length of service that shall entitle Medical Officers to retire on their pensions according to the new scale, due allowance will be made for the late age to which they must have attained, before they can be admitted to the Service; this principle having heretofore been strictly adhered to by your Honourable Court in regulating the relative periods of service for their purely Military and Medical servants. In consideration too of the period of currency of this new scheme of retirement already lost to your Memorialists, they earnestly entreat a speedy as well as favourable answer from your Honourable Court to this their humble but earnest, reasonable, sole and unanimous petition for extension to the Medical branch, with the existing relative terms of service, of the Boon lately conferred on the Military; and your Memorialists as in duty bound shall ever pray.

(Signed) For himself and others whose names are hereunto appended.

To DRS. FORBES AND CONOLLY,
Editors of the British and Foreign Medical Review, &c.

GENTLEMEN,

IN No XIII. page 231, of your Review, is noticed my System of Practical Surgery, part I.;—upon which article I expect that, in your next Number, you will, from a sense of justice, give my remarks.

In his very first paragraph, the self-elected judge pronounces upon the work an unqualified sentence of condemnation; with which may be contrasted the last paragraph, concluding, "*that we cannot recommend it*, (the work) *to our readers on such grounds as these, that it doubtless contains many valuable facts*," &c.

The intervening part of this effusion is no less entertaining. My book is consigned to oblivion upon the following allegations; the want of definite and indefinite articles; the want of the causes of luxations; the want of *differential diagnosis:* and the want of accuracy in the diction. He has pointed out, I think, three typographical mistakes; for these I am obliged to him; I have myself discovered a few more equally unimportant, but none of them shall be overlooked. The rest of the errors exist only in his own inventive imagination. I should wish an explanation of "*differential diagnosis*," as well as of the novel doctrine, "that many valuable facts" are no recommendation.

This writer piques himself upon his skill in composition, and his grammatical acumen. Let us test his modest pretensions by the document before us.—It begins, "It is *painful* to us *to be called on* to pass judgement—*as* we are *sorry to say*, we not unfrequently are," &c. "It is painful *to* us to be,"—here is a childish solecism. This unhappy being, indeed is overwhelmed with pain and sorrow, but what is painful? is it the passing of the judgment? no, it is *the being called on:* what is he sorry for? not the judgment which may injure his neighbour, but, *to say*, is the cause of his affliction! It is desirable to have an explanation of the *as*, for its use here puzzles me as much as the "*differential diagnosis*." What boy, in his first essay, ever produced so much ungrammatical nonsense in so few words?

Line 15.—"But *as* our time will not allow us to comment upon its whole contents, we *shall* select," &c. The *shall* here reminds me of a London Professor, who wrote to his Scotch friend, "Will you dine with me to-day?" The answer returned was, "Yes I shall!" Might we not have expected better English, even from a north-country adventurer?

Line 26—"Studying causes *in dislocations of bones*." Is this an advice to lawyers or are we to have a new science of etiology? To me certainly the observation is inapplicable, seeing that in my work the causes of dislocations are given in ample detail.

Line 33.—"About flattening of the deltoid muscle;"—these five words exibit a violation of the common rules of grammar given in every school-book; and the whole proves that our erudite censor knows as much of the use of articles, as of any other part of speech.

This grand specimen of *correct and elegant diction* comprises about five dozen of lines, in which it were not difficult to point out at least an equal number of palpable blunders. It has been said of the author of Hudibras, "that his satirical poem is a burlesque upon poetical language;" but I am not inclined to give my monitor the credit of purposely displaying the faults of which he complains; every intriguing creature is not a Butler.

Any competent person who may take the trouble of "*examining*" the surgery of this sapient critic, will find his literary and surgical accomplishments of equal value; and that to decide upon a system of Surgery, he is a marvellous proper man.

I am, Gentlemen, your obedient Servant,

Edinburgh, 33, *York Place*, 21*st January*, 1839. JOHN LIZARS.

To the above letter I received an answer from Dr. Forbes refusing to insert it without payment and to which the following was my reply. J. L.

Edinburgh, 9th Feb. 1839.

DEAR SIR,—Your answer to me of the 30th ult., is written in a friendly style though in effect it declares, that, *in your Journal you will publish any tissue of calumny and falsehood, but no vindication.* It has been said, that the corruption and servility of the periodical press are the opprobium of the present age; I fear that the Foreign Quarterly will not prove the assertion unfounded. You advise me, no doubt disinterestedly, to suppress my letter, as your Reviewer did, to withdraw my work on surgery, but the greatest ornaments and ablest men of our profession differ from him in opinion. From your offer of inserting for payment my defence in your extra-limites, I infer, that impartiality and truth unbought, find no place within your boundaries; I *will* therefore, apply where I believe, I *shall* meet with a more favourable reception, and having given you, and your literary English friends, a practical illustration of will and shall,

I am Dear Sir,

Your very obedient Servant,

JOHN LIZARS.

SPECIFIC FOR FEVER, NOW FIRST INTRODUCED INTO EUROPE.

Address to the Public.

HAVING, as I perfectly believe,—(and my own convictions are confirmed by the opinions of many experienced Physicians and others, who have witnessed its effects,)—discovered a certain Remedy for Fever, of any type, I feel it to be a duty which I owe to my own character as a professional man, to the Public, and more especially to my Medical brethren, to communicate some particulars relative to this Medicine;

Having ascertained its efficacy in my own practice, my next anxiety was to have the Medicine tried by others and reported upon. By great exertion, and at considerable expense, I prepared a quantity sufficient for upwards of seven thousand cases, the whole of which I distributed gratuitously into various parts of British, Dutch, and French Guiana, the West Indies, North and South America Batavia, and the East Indies. The Deputy Inspector General of Army Hospitals in British Guiana, who authorized the use, and officially reported upon the effects, of the Medicine among the Troops in that Colony, also forwarded to the home authorities a number of bottles of it, with a recommendation that it should be tried in the Military Hospitals in Malta, Gibraltar, the Ionian Islands, &c. The Reports which I have hitherto received are uniform in their testimony to the immediate and beneficial effects of the Medicine.

It is my earnest wish, that here, as has already been the case in the West Indies, this Medicine shall rest its claims to public confidence solely on its ascertained merits. I therefore invite the Physician of the principal Medical Establishments in Great Britain, to the strictest trial of my Fever Drops; and I have stipulated with MESSRS. PARKER AND COMPANY, King William-street, Charing-Cross, that the requisite Medicine for such trials shall be furnished *gratis*, upon proper application.

The form in which I exhibit it, is that of a Tincture. Doses, two; quantity per dose, two drachms and a half; interval between doses, three hours. The effects uniformly produced, are, relief of pains in the head, back, and limbs; slightly narcotic, and highly sudorific. Usual period for total eradication of Fever, from three hours to twenty-four.

London, 13th March, 1839. CARL WARBURG, M.D.

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